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The Resources Agency  
DEPARTMENT OF FISH AND GAME

MARINE RECREATIONAL FISHERIES STATISTICS SURVEY  
FOR NORTHERN AND CENTRAL CALIFORNIA,  
QUARTERLY REPORT NO. 27,  
JANUARY TO MARCH, 1986

by

Konstantin A. Karpov

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ABSTRACT

Field intercept Marine Recreational Fisheries Statistics Survey (MRFSS) data for central and northern California, collected in January to March 1986, is presented in a data report format. Data in this quarterly report are subdivided into three categories: primarily by five geographical areas; secondarily by fishing modes and gear types within each area; and finally by catch definition for each area, mode, and gear type. Tables are presented for these categories, each with three sections: sampled effort, ranked catch, and catch-per-unit-effort (CPUE). Also, within each area, length-frequency histograms and tables are presented for select species.

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## INTRODUCTION

The California Department of Fish and Game under contract to the National Marine Fisheries Service (NMFS) has participated in the Marine Recreational Fisheries Statistics Survey (MRFSS) from mid 1979 to the present. The survey was initiated to gather catch and effort statistics for marine recreational fisheries along the Pacific west coast.

Annual summaries of these statistics are being published elsewhere on a regional basis (Current Fisheries Statistics Numbers 8321, 8323, 8325, 8328 and In press). In these summaries, California's data is divided into two regions: Del Norte to Monterey counties (northern region), and San Luis Obispo to San Diego counties (southern region).

This Quarterly Report No. 27 covers the period of January through March 1986. It supplements the federal annual summary for only the north-central region of California (Del Norte to San Luis Obispo counties). This region is divided into five areas (subregions) corresponding to historical ports.

## METHODS

Catch and length data were collected by Department biologists intercepting anglers actively fishing or in the process of leaving a fishing site. Sampling methodology is described in part in Current Fisheries Statistics (8321, 8323, 8325, 8328, and In press).

Data in this quarterly report are subdivided into three categories: primarily by five geographical areas; secondarily by fishing modes and gear types within each area; and finally by catch definition for each area, mode, and gear type. Tables are presented for these categories, each with three sections: sampled effort, ranked catch, and catch-per-unit-effort (CPUE).

Also, within each area, length-frequency histograms and tables are presented for select species.

### Study Areas

Study areas range in size from one county in Area 5 to seven counties in Area 3 (Figure 1). Adjacent counties are combined whenever similarity of habitat and species composition warrants. Boat modes are segregated by county only if separate grounds were fished (i.e. Sonoma County Bodega Bay fishery, sub-area 097, from Mendocino County, sub-area 045).

Area 1, including Del Norte and Humboldt counties, extends from the Oregon border to Shelter Cove. Both counties are combined in all mode comparisons. Area 2 contains Mendocino County and that part of Sonoma County which is north of Bodega Bay. Both counties are combined for all modes except the boat modes (private/rental boat and CPFV). The San Francisco Area 3 is segregated into ocean and bay. This area includes anglers from seven counties; Marin, Solano, Contra Costa, Santa Clara, Alameda, San Francisco, and San Mateo. These counties encircle the bay and extend down to Ano Nuevo. Two sets of tables and figures were generated based on whether anglers specified having fished in the ocean or the bay. Bay anglers were predominantly from San Francisco Bay, but also included a small percentage of Halfmoon Bay anglers. Area 4 includes Santa Cruz County and that part of Monterey County which is north of Ragged Point. Area 5, San Luis Obispo County, extends down to Point Sal.

### Fishing Modes

Modes of fishing were organized into six categories: (i) pier or dock, (ii) jetty or breakwater, (iii) bridge or causeway, (iv) beach or bank, (v) private or rental boat, and (vi) commercial passenger fishing vessel (CPFV).

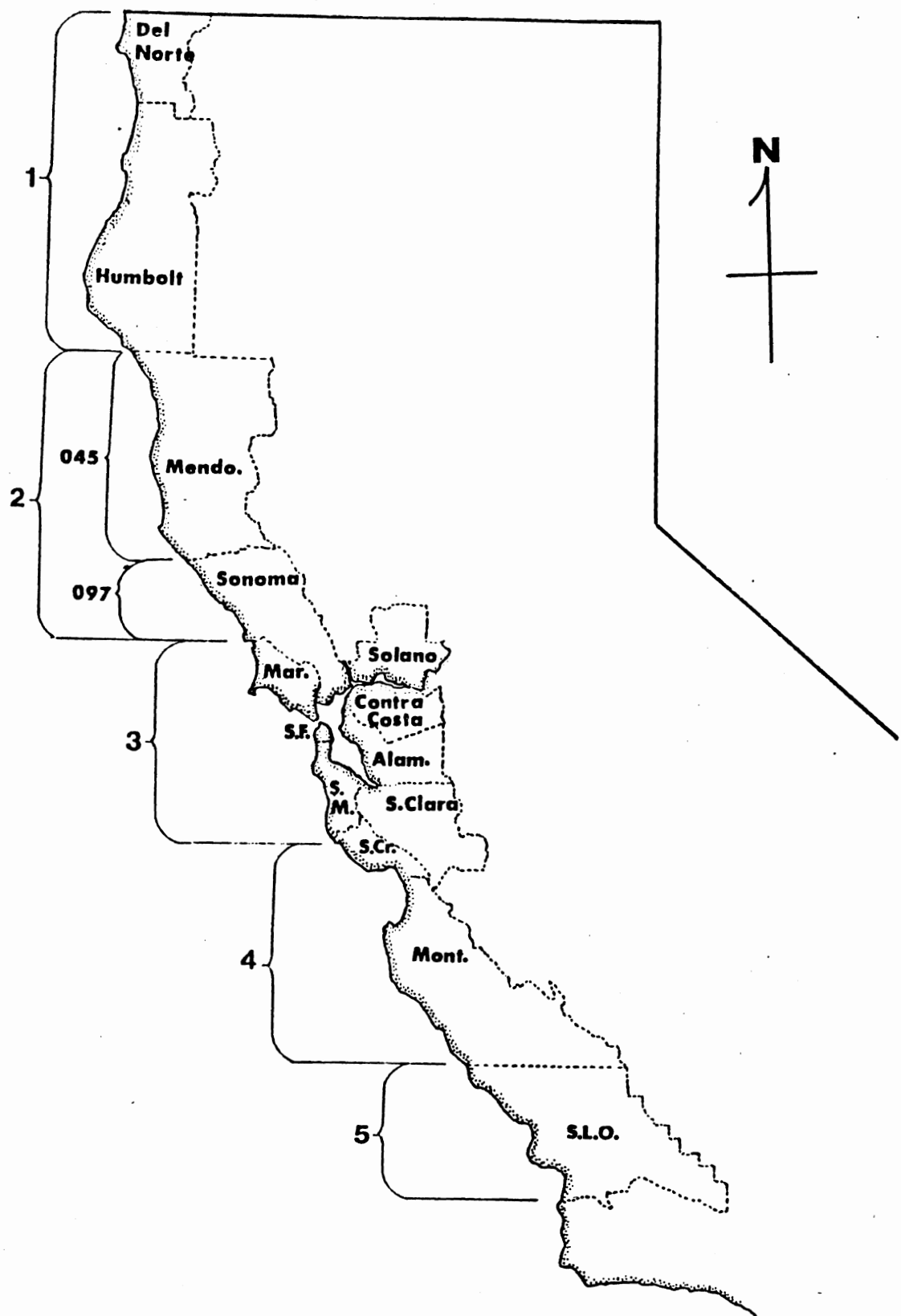


FIGURE 1. Study area counties and sub-areas in northern and central California.

### Gear Types

Three types of gear were used; (i) hook-and-line, (ii) spear, or (iii) net. Spears were used only by divers. Dipnet and castnet were the only net gears in active use in northern and central California.

### Catch Definition

Catch is defined three different ways: (i) all fish captured, including fish returned dead or alive, those not available at the sampling site (i.e. filleted or given away, etc.), and those available to measure; (ii) landed catch, not including fish returned dead or alive; and, (iii) the measured catch only. Fish caught but unavailable to measure were identified to the nearest taxa using the angler's description.

### Computer-Generated Tables and Figures

The Microcomputer Program Series (MPS) was developed to generate the tables and figures used in this report. The programs were designed for flexibility and ease of use on area microcomputers. The programs allow the user to generate tables and figures for any combination of area, mode, gear, or definition of catch. Data generated by these programs include: sampled effort, ranked catch, CPUE, and length-frequency data. Documentation of logic and program listings are available (Karpov, 1984).

#### Sampled Effort

Sampled effort is the same for all three catch definitions for a particular area, mode, or gear. It includes the number of anglers intercepted, the total hours fishing effort, and total hours still to be fished for incomplete trips.

#### Ranked Catch

Ranked catch includes rank of species caught by number or weight, and other statistics depending on the catch definition. Fish are ranked by

number caught in two of the catch definitions: all fish caught, and landed catch. The measured catch has fish ranked by weight caught. The measured catch tables include average lengths and standard deviation, and derived average weight.

#### CPUE

CPUE is calculated using two definitions of both "catch" and "effort". Catch is either number or weight (kilograms) caught. Effort is either angler days or total hours fished. CPUE, computed using weight caught as opposed to number landed, are included only for two of the catch definitions: landed catch and measured catch. Average weights incorporated in the landed catch tables are derived either from the respective measured catch table for the same species or, for the more general species groups by calculating a group average weight. Group average weights of constituent species were calculated from this quarter's data for the same mode, gear, and area. Angler days represent completed fishing days for most areas and modes. Occasional incomplete trips were included for all modes except boat modes.

#### Length-Frequency Data

Length-frequency histograms and tables were generated for select species. Histograms are included for highly abundant species where at least 10 measured fish occurred in the most frequent size interval. Histograms were summarized in either 5-, 10-, or 20-mm intervals. The criteria for assigning summary intervals was based on the largest recorded size for the species as reported in Miller and Lea (1972). Fish reported from 0 to 12 inches used 5-mm, greater than 12 to 24 inches used 10-mm and greater than 24 inches were assigned 20-mm intervals.

Length-frequency tables (see Appendix A) were generated for all species with at least five measured fish for any given area, mode, and gear. Tables were summarized in 5-mm intervals and include length statistics for possible use in ANOVA computations (Sokal and Rohlf, 1969).

#### Species Names and Length-Weight Parameters

Total length was recorded for all species except tuna-like fishes with rigid concave caudal fins; for these fork lengths were used. Weights were not actually measured; rather, they were determined, for all major species taken, from precalculated length-weight relationships. The exponential relationship used was  $W=aL^b$ ; where a and b are constants unique to each species (Appendix B).

Scientific and common names used were standardized using the American Fisheries Society list (1980).

Table 1. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	33
Total Hours Effort for Anglers Intercepted	=	84.6
Total Hours Still to Fish (Incomplete Trips)	=	0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Herring, Pacific	1	47	37.9
Seaperch, White	2	35	28.2
Surfperches	3	17	13.7
Perch, Pile	4	8	6.5
Sculpins	5	4	3.2
Surfperch, Walleye	6	3	2.4
Greenlings (general)	7	2	1.6
Greenling, Kelp	8	2	1.6
Sculpin, Pacific Staghorn	9	2	1.6
Rockfishes (general)	10	1	0.8
Seaperch, Striped	11	1	0.8
Surfperch, Redtail	12	1	0.8
Sanddab, Speckled	13	1	0.8
Total		124	100

#### C. CPUE

Catch per Angler Day	=	3.76	Catch per Angler Hour	=	1.47
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Table 2. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted	=	33
Total Hours Effort for Anglers Intercepted	=	84.6
Total Hours Still to Fish (Incomplete Trips)	=	0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Herring, Pacific	1	47	47.0	0.15**	7.05
Seaperch, White	2	35	35.0	0.24	8.57
Perch, Pile	3	8	8.0	0.33	2.65
Surfperch, Walleye	4	3	3.0	0.21	0.64
Greenling, Kelp	5	2	2.0	0.13	0.26
Sculpin, Pacific Staghorn	6	2	2.0	0.12	0.24
Seaperch, Striped	7	1	1.0	0.21	0.21
Surfperch, Redtail	8	1	1.0	0.35	0.35
Sanddab, Speckled	9	1	1.0	0.07	0.07
Total		100	100		20.04

#### C. CPUE

Catch per Angler Day	=	3.03	Catch per Angler Hour	=	1.18
Kg per Angler Day	=	0.61	Kg per Angler Hour	=	0.24

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).



Table 3. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 33  
 Total Hours Effort for Anglers Intercepted = 84.6  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Seaperch, White	1	8.08	33	64.7	26	0.24	266	43
Perch, Pile	2	2.65	8	15.7	8	0.33	273	18
Surfperch, Walleye	3	0.64	3	5.9	3	0.21	230	12
Surfperch, Redtail	4	0.35	1	2.0	1	0.35	276	0
Greenling, Kelp	5	0.26	2	3.9	2	0.13	207	15
Sculpin, Pacific Staghorn	6	0.24	2	3.9	2	0.12	228	18
Seaperch, Striped	7	0.21	1	2.0	1	0.21	235	0
Sanddab, Speckled	8	0.07	1	2.0	1	0.07	175	0
Total		12.50	51	100	44			

## C. CPUE\*\*\*

Catch per Angler Day = 1.55      Catch per Angler Hour = 0.60  
 Kg per Angler Day = 0.38      Kg per Angler Hour = 0.15

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 4. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	157
Total Hours Effort for Anglers Intercepted	=	457.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Herring, Pacific	1	169	31.7
Greenling, Kelp	2	92	17.3
Surfperch, Silver	3	54	10.1
Greenlings (general)	4	36	6.8
Surfperch, Redtail	5	35	6.6
Surfperches	6	34	6.4
Rockfish, Black	7	27	5.1
Rockfish, Grass	8	16	3.0
Seaperch, Striped	9	16	3.0
Rockfishes (general)	10	11	2.1
Greenling, Rock	11	8	1.5
Cabazon	12	8	1.5
Surfperch, Walleye	13	6	1.1
Jacksmelt	14	5	0.9
Seaperch, White	15	4	0.8
Sculpins	16	3	0.6
Smoothhound, Brown	17	2	0.4
Rockfish, Brown	18	2	0.4
Rockfish, Blue	19	2	0.4
Perch, Pile	20	2	0.4
Flounder, Starry	21	1	0.2
Total		533	100

#### C. CPUE

Catch per Angler Day	=	3.39	Catch per Angler Hour	=	1.17
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Table 5. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

## A. Sampled Effort

Number Anglers Intercepted	=	157
Total Hours Effort for Anglers Intercepted	=	457.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Herring, Pacific	1	169	39.6	0.15	25.75
Greenling, Kelp	2	74	17.3	0.30	22.05
Surfperch, Silver	3	54	12.6	0.15	8.19
Surfperch, Redtail	4	35	8.2	0.45	15.90
Seaperch, Striped	5	16	3.7	0.38	6.04
Rockfish, Grass	6	15	3.5	0.57	8.48
Rockfish, Black	7	10	2.3	0.33	3.33
Greenling, Rock	8	8	1.9	0.32	2.55
Cabazon	9	8	1.9	0.74	5.90
Greenlings (general)	10	7	1.6	0.30**	2.10
Surfperches	11	7	1.6	0.30**	2.10
Surfperch, Walleye	12	6	1.4	0.24	1.42
Jacksmelt	13	5	1.2	0.43	2.16
Seaperch, White	14	4	0.9	0.34	1.37
Rockfish, Brown	15	2	0.5	0.20	0.40
Rockfish, Blue	16	2	0.5	0.09	0.19
Perch, Pile	17	2	0.5	0.99	1.98
Smoothhound, Brown	18	1	0.2	0.00**	0.00
Rockfishes (general)	19	1	0.2	0.43**	0.43
Flounder, Starry	20	1	0.2	0.82	0.82
Total		427	100		111.15

## C. CPUE

Catch per Angler Day	=	2.72	Catch per Angler Hour	=	0.93
Kg per Angler Day	=	0.71	Kg per Angler Hour	=	0.24

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 6. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 157  
 Total Hours Effort for Anglers Intercepted = 457.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Herring, Pacific	1	25.75	169	43.3	40	0.15	240	13
Greenling, Kelp	2	16.98	57	14.6	53	0.30	259	38
Surfperch, Redtail	3	15.90	35	9.0	26	0.45	290	46
Rockfish, Grass	4	8.48	15	3.8	15	0.57	280	63
Surfperch, Silver	5	8.19	54	13.8	47	0.15	211	16
Seaperch, Striped	6	6.04	16	4.1	16	0.38	279	45
Cabazon	7	5.16	7	1.8	7	0.74	338	75
Rockfish, Black	8	3.33	10	2.6	10	0.33	268	61
Greenling, Rock	9	2.23	7	1.8	7	0.32	275	50
Jacksmelt	10	2.16	5	1.3	5	0.43	375	28
Perch, Pile	11	1.98	2	0.5	2	0.99	387	49
Surfperch, Walleye	12	1.42	6	1.5	6	0.24	235	19
Flounder, Starry	13	0.82	1	0.3	1	0.82	403	0
Seaperch, White	14	0.68	2	0.5	2	0.34	305	18
Rockfish, Brown	15	0.40	2	0.5	2	0.20	221	22
Rockfish, Blue	16	0.19	2	0.5	2	0.09	180	33
Total		99.72	390	100	241			

## C. CPUE\*\*\*

Catch per Angler Day = 2.48      Catch per Angler Hour = 0.85  
 Kg per Angler Day = 0.64      Kg per Angler Hour = 0.22

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 7. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

## A. Sampled Effort

Number Anglers Intercepted	=	97
Total Hours Effort for Anglers Intercepted	=	252.6
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Herring, Pacific	1	103	36.0
Surfperches	2	54	18.9
Greenling, Kelp	3	23	8.0
Seaperch, Striped	4	19	6.6
Surfperch, Redtail	5	15	5.2
Trout, Rainbow	6	11	3.8
Surfperch, Silver	7	10	3.5
Prickleback, Monkeyface	8	7	2.4
Greenlings (general)	9	6	2.1
Sculpins	10	6	2.1
Cabezon	11	6	2.1
Trout, Cutthroat	12	5	1.7
Rockfish, Grass	13	3	1.0
Sculpin, Pacific Staghorn	14	3	1.0
Prickleback, Rock	15	3	1.0
Rockfishes (general)	16	2	0.7
Greenling, Rock	17	2	0.7
Surfperch, Calico	18	2	0.7
Jacksmelt	19	1	0.3
Sculpin, Buffalo	20	1	0.3
Seaperch, White	21	1	0.3
Perch, Pile	22	1	0.3
Flounders, Lefteye	23	1	0.3
Sole, Sand	24	1	0.3
Total		286	100

## C. CPUE

Catch per Angler Day = 2.95      Catch per Angler Hour = 1.13

Table 8. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 97  
 Total Hours Effort for Anglers Intercepted = 252.6  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Herring, Pacific	1	103	50.7	0.15	15.13
Greenling, Kelp	2	21	10.3	0.45	9.36
Seaperch, Striped	3	18	8.9	0.30	5.39
Surfperch, Redtail	4	15	7.4	0.38	5.76
Surfperch, Silver	5	10	4.9	0.13	1.30
Trout, Rainbow	6	7	3.4	0.47	3.31
Prickleback, Monkeyface	7	7	3.4	0.00**	0.00
Trout, Cutthroat	8	5	2.5	0.43	2.16
Cabazon	9	5	2.5	1.30	6.49
Rockfish, Grass	10	3	1.5	1.00	3.00
Greenling, Rock	11	2	1.0	0.38	0.77
Surfperch, Calico	12	2	1.0	0.28	0.55
Jacksmelt	13	1	0.5	0.39	0.39
Seaperch, White	14	1	0.5	0.32	0.32
Perch, Pile	15	1	0.5	0.48	0.48
Prickleback, Rock	16	1	0.5	0.00**	0.00
Sole, Sand	17	1	0.5	0.07	0.07
Total		203	100		54.46

#### C. CPUE

Catch per Angler Day = 2.09      Catch per Angler Hour = 0.80  
 Kg per Angler Day = 0.56      Kg per Angler Hour = 0.22

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 9. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 97  
 Total Hours Effort for Anglers Intercepted = 252.6  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Herring, Pacific	1	15.13	103	50.7	30	0.15	236	15
Greenling, Kelp	2	9.36	21	10.3	21	0.45	306	63
Cabazon	3	6.49	5	2.5	5	1.30	412	108
Surfperch, Redtail	4	5.76	15	7.4	15	0.38	278	37
Seaperch, Striped	5	5.39	18	8.9	18	0.30	261	20
Trout, Rainbow	6	3.31	7	3.4	7	0.47	366	45
Rockfish, Grass	7	3.00	3	1.5	3	1.00	332	101
Trout, Cutthroat	8	2.16	5	2.5	5	0.43	335	15
Surfperch, Silver	9	1.30	10	4.9	10	0.13	201	14
Greenling, Rock	10	0.77	2	1.0	2	0.38	293	71
Surfperch, Calico	11	0.55	2	1.0	2	0.28	255	20
Perch, Pile	12	0.48	1	0.5	1	0.48	308	0
Jacksmelt	13	0.39	1	0.5	1	0.39	365	0
Seaperch, White	14	0.32	1	0.5	1	0.32	298	0
Sole, Sand	15	0.07	1	0.5	1	0.07	183	0
Prickleback, Rock	16	0.00	1	0.5	1	0.00	462	0
Prickleback, Monkeyface	17	0.00	7	3.4	7	0.00	460	59
Total		54.46	203	100	130			

## C. CPUE\*\*\*

Catch per Angler Day = 2.09      Catch per Angler Hour = 0.80  
 Kg per Angler Day = 0.56      Kg per Angler Hour = 0.22

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 10. Sampled Effort, Ranked Catch and CPUE for Area 1  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Hook-and-Line Gear. Catch Represents All Fish Captured,  
Both Kept and Returned.

## A. Sampled Effort

Number Anglers Intercepted = 70  
Total Hours Effort for Anglers Intercepted = 304.5  
Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Trout, Rainbow	1	14	35.9
Rockfish, Black	2	11	28.2
Salmon, Chinook (King)	3	7	17.9
Trout, Cutthroat	4	3	7.7
Rockfish, Canary	5	2	5.1
Herring, Pacific	6	1	2.6
Cabezon	7	1	2.6
Total		39	100

## C. CPUE

Catch per Angler Day = 0.56      Catch per Angler Hour = 0.13



Table 11. Sampled Effort, Ranked Catch and CPUE for Area 1  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Hook-and-Line Gear. Catch Represents Number Landed  
and Does Not Include Fish Returned Dead or Alive.

## A. Sampled Effort

Number Anglers Intercepted = 70  
Total Hours Effort for Anglers Intercepted = 304.5  
Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Trout, Rainbow	1	11	30.6	0.94	10.31
Rockfish, Black	2	11	30.6	0.68	7.49
Salmon, Chinook (King)	3	7	19.4	4.31	30.17
Trout, Cutthroat	4	3	8.3	0.33	1.00
Rockfish, Canary	5	2	5.6	1.08	2.16
Herring, Pacific	6	1	2.8	0.13	0.13
Cabazon	7	1	2.8	2.05	2.05
Total		36	100		53.30

## C. CPUE

Catch per Angler Day = 0.51      Catch per Angler Hour = 0.12  
Kg per Angler Day = 0.76      Kg per Angler Hour = 0.18

\* Weight estimated from length-to-weight regression if available.

Table 12. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 70  
 Total Hours Effort for Anglers Intercepted = 304.5  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Salmon, Chinook (King)	1	30.17	7	20.0	7	4.31	765	67
Trout, Rainbow	2	10.31	11	31.4	11	0.94	450	83
Rockfish, Black	3	6.81	10	28.6	10	0.68	345	66
Rockfish, Canary	4	2.16	2	5.7	2	1.08	418	20
Cabezon	5	2.05	1	2.9	1	2.05	510	0
Trout, Cutthroat	6	1.00	3	8.6	3	0.33	308	14
Herring, Pacific	7	0.13	1	2.9	1	0.13	228	0
Total		52.62	35	100	35			

## C. CPUE\*\*\*

Catch per Angler Day = 0.50      Catch per Angler Hour = 0.11  
 Kg per Angler Day = 0.75      Kg per Angler Hour = 0.17

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Figure 2. Length-Frequency Histogram for Pacific Herring  
 Taken by Jetty or Breakwater Anglers Using Hook-and-Line Gear.  
 Area 1, Quarter 1, 1986.

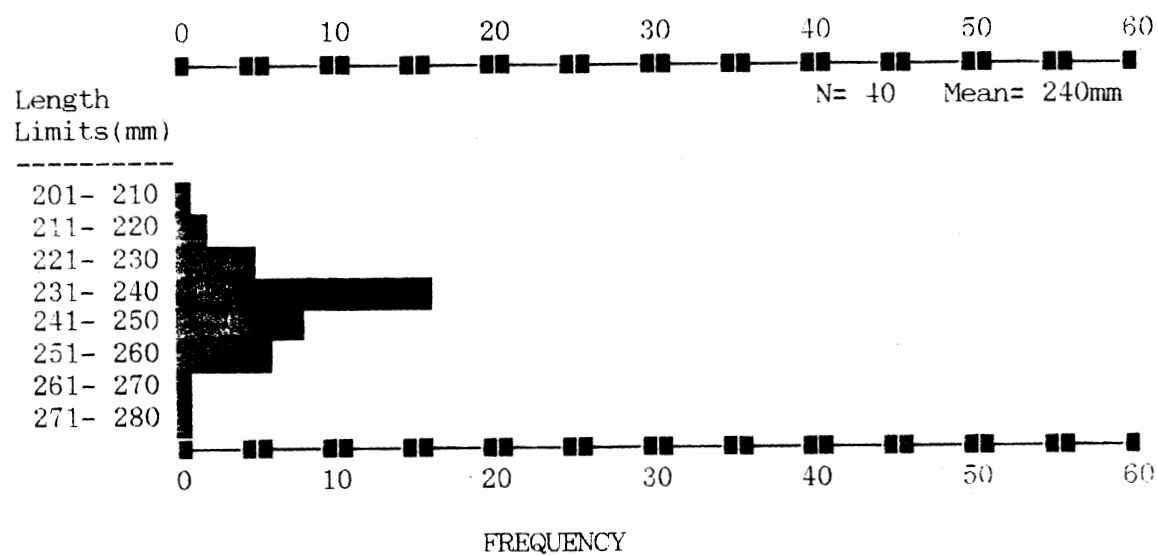


Table 13. Sampled Effort, Ranked Catch and CPUE for Area 2  
in 1986 for Quarter 1, by Pier or Dock Anglers Using  
Hook-and-Line Gear. Catch Represents All Fish Captured,  
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	5
Total Hours Effort for Anglers Intercepted	=	4.5
Total Hours Still to Fish (Incomplete Trips)	=	1.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
-----			
Total		0	0

C. CPUE

Catch per Angler Day	=	0.00	Catch per Angler Hour	=	0.00
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Table 14. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	5
Total Hours Effort for Anglers Intercepted	=	4.5
Total Hours Still to Fish (Incomplete Trips)	=	1.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
-----					
Total		0	0		0.00

C. CPUE

Catch per Angler Day	=	0.00	Catch per Angler Hour	=	0.00
Kg per Angler Day	=	0.00	Kg per Angler Hour	=	0.00

\* Weight estimated from length-to-weight regression if available.

Table 15. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 5  
 Total Hours Effort for Anglers Intercepted = 4.5  
 Total Hours Still to Fish (Incomplete Trips) = 1.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Total		0.00	0	0	0			

C. CPUE\*\*\*

Catch per Angler Day = 0.00      Catch per Angler Hour = 0.00  
 Kg per Angler Day = 0.00      Kg per Angler Hour = 0.00

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 16. Sampled Effort, Ranked Catch and CPUE for Area 2  
in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using  
Hook-and-Line Gear. Catch Represents All Fish Captured,  
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	61
Total Hours Effort for Anglers Intercepted	=	175.5
Total Hours Still to Fish (Incomplete Trips)	=	14.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Seaperch, Striped	1	25	50.0
Surfperch, Silver	2	6	12.0
Seaperch, White	3	5	10.0
Sculpins	4	4	8.0
Lingcod	5	3	6.0
Sculpin, Pacific Staghorn	6	2	4.0
Perch, Pile	7	2	4.0
Skates	8	1	2.0
Greenling, Kelp	9	1	2.0
Sanddab, Pacific	10	1	2.0
Total		50	100

C. CPUE

Catch per Angler Day = 0.82      Catch per Angler Hour = 0.28

Table 17. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 61  
 Total Hours Effort for Anglers Intercepted = 175.5  
 Total Hours Still to Fish (Incomplete Trips) = 14.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Seaperch, Striped	1	25	58.1	0.28	7.08
Surfperch, Silver	2	6	14.0	0.16	0.95
Seaperch, White	3	5	11.6	0.00**	0.00
Lingcod	4	2	4.7	1.58	3.15
Perch, Pile	5	2	4.7	0.53	1.07
Greenling, Kelp	6	1	2.3	0.23	0.23
Sculpin, Pacific Staghorn	7	1	2.3	0.07	0.07
Sanddab, Pacific	8	1	2.3	0.55	0.55
Total		43	100		13.11

#### C. CPUE

Catch per Angler Day = 0.70      Catch per Angler Hour = 0.25  
 Kg per Angler Day = 0.21      Kg per Angler Hour = 0.07

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).



Table 18. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 61  
 Total Hours Effort for Anglers Intercepted = 175.5  
 Total Hours Still to Fish (Incomplete Trips) = 14.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Seaperch, Striped	1	7.08	25	65.8	10	0.28	255	34
Lingcod	2	3.15	2	5.3	2	1.58	516	103
Perch, Pile	3	1.07	2	5.3	2	0.53	319	19
Surfperch, Silver	4	0.95	6	15.8	6	0.16	213	25
Sanddab, Pacific	5	0.55	1	2.6	1	0.55	353	0
Greenling, Kelp	6	0.23	1	2.6	1	0.23	250	0
Sculpin, Pacific Staghorn	7	0.07	1	2.6	1	0.07	192	0
Total		13.11	38	100	23			

## C. CPUE\*\*\*

Catch per Angler Day = 0.62      Catch per Angler Hour = 0.22  
 Kg per Angler Day = 0.21      Kg per Angler Hour = 0.07

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 19. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	50
Total Hours Effort for Anglers Intercepted	=	126.0
Total Hours Still to Fish (Incomplete Trips)	=	8.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Seaperch, Striped	1	9	31.0
Greenlings (general)	2	8	27.6
Greenling, Kelp	3	6	20.7
Trout, Rainbow	4	2	6.9
Cabazon	5	2	6.9
Unidentified Fishes	6	1	3.4
Greenling, Rock	7	1	3.4
Total		29	100

C. CPUE

Catch per Angler Day	=	0.58	Catch per Angler Hour	=	0.23
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Table 20. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 50  
 Total Hours Effort for Anglers Intercepted = 126.0  
 Total Hours Still to Fish (Incomplete Trips) = 8.5

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Greenlings (general)	1	7	31.8	0.32**	2.24
Greenling, Kelp	2	6	27.3	0.36	2.14
Seaperch, Striped	3	5	22.7	0.43	2.15
Trout, Rainbow	4	2	9.1	1.90	3.81
Greenling, Rock	5	1	4.5	0.13	0.13
Cabazon	6	1	4.5	0.49	0.49
Total		22	100		16.95

#### C. CPUE

Catch per Angler Day = 0.44      Catch per Angler Hour = 0.17  
 Kg per Angler Day = 0.34      Kg per Angler Hour = 0.13

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 21. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

#### A. Sampled Effort

Number Anglers Intercepted = 50  
 Total Hours Effort for Anglers Intercepted = 126.0  
 Total Hours Still to Fish (Incomplete Trips) = 8.5

#### B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Trout, Rainbow	1	9.81	2	13.3	2	4.90	797	1
Seaperch, Striped	2	2.15	5	33.3	5	0.43	291	50
Greenling, Kelp	3	2.14	6	40.0	6	0.36	287	46
Cabazon	4	0.49	1	6.7	1	0.49	302	0
Greenling, Rock	5	0.13	1	6.7	1	0.13	204	0
Total		14.71	15	100	15			

#### C. CPUE\*\*\*

Catch per Angler Day = 0.30      Catch per Angler Hour = 0.12  
 Kg per Angler Day = 0.29      Kg per Angler Hour = 0.12

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 22. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 1, by Beach or Bank Anglers Using Spear Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	5
Total Hours Effort for Anglers Intercepted	=	7.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Seaperch, Striped	1	8	72.7
Cabezon	2	2	18.2
Greenling, Kelp	3	1	9.1
Total		11	100

C. CPUE

Catch per Angler Day	=	2.20	Catch per Angler Hour	=	1.57
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Table 23. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 1, by Beach or Bank Anglers Using Spear Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	5
Total Hours Effort for Anglers Intercepted	=	7.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Seaperch, Striped	1	8	72.7	0.50	4.03
Cabazon	2	2	18.2	1.22	2.45
Greenling, Kelp	3	1	9.1	0.99	0.99
Total		11	100		7.47

C. CPUE

Catch per Angler Day	=	2.20	Catch per Angler Hour	=	1.57
Kg per Angler Day	=	1.49	Kg per Angler Hour	=	1.07

\* Weight estimated from length-to-weight regression if available.

Table 24. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 1, by Beach or Bank Anglers Using Spear Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 5  
 Total Hours Effort for Anglers Intercepted = 7.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Seaperch, Striped	1	4.03	8	72.7	8	0.50	312	28
Cabezon	2	2.45	2	18.2	2	1.22	411	105
Greenling, Kelp	3	0.99	1	9.1	1	0.99	417	0
Total		7.47	11	100	11			

## C. CPUE\*\*\*

Catch per Angler Day = 2.20      Catch per Angler Hour = 1.57  
 Kg per Angler Day = 1.49      Kg per Angler Hour = 1.07

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 25. Sampled Effort, Ranked Catch and CPUE for Area 045  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Hook-and-Line Gear. Catch Represents All Fish Captured,  
Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	56
Total Hours Effort for Anglers Intercepted	=	189.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	38	28.8
Lingcod	2	25	18.9
Greenling, Kelp	3	14	10.6
Rockfish, Canary	4	12	9.1
Sanddab, Pacific	5	10	7.6
Rockfish, China	6	9	6.8
Rockfish, Black	7	8	6.1
Rockfish, Copper	8	4	3.0
Rockfishes (general)	9	3	2.3
Rockfish, Yellowtail	10	2	1.5
Rockfish, Vermilion	11	2	1.5
Cabazon	12	2	1.5
Rockfish, Rosy	13	1	0.8
Rockfish, Yelloweye	14	1	0.8
Sole, Sand	15	1	0.8
Total		132	100

#### C. CPUE

Catch per Angler Day	=	2.36	Catch per Angler Hour	=	0.70
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Table 26. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 56  
 Total Hours Effort for Anglers Intercepted = 189.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	34	31.5	0.37	12.50
Lingcod	2	16	14.8	3.51	56.09
Rockfish, Canary	3	12	11.1	0.54	6.47
Sanddab, Pacific	4	10	9.3	0.10	1.00
Rockfish, China	5	9	8.3	0.78	7.04
Rockfish, Black	6	8	7.4	0.80	6.41
Greenling, Kelp	7	6	5.6	0.57	3.45
Rockfish, Copper	8	4	3.7	1.75	7.00
Rockfish, Yellowtail	9	2	1.9	1.37	2.74
Rockfish, Vermilion	10	2	1.9	1.12	2.24
Cabazon	11	2	1.9	0.95	1.90
Rockfish, Rosy	12	1	0.9	0.43	0.43
Rockfish, Yelloweye	13	1	0.9	2.81	2.81
Sole, Sand	14	1	0.9	0.47	0.47
Total		108	100		110.54

#### C. CPUE

Catch per Angler Day = 1.93      Catch per Angler Hour = 0.57  
 Kg per Angler Day = 1.97      Kg per Angler Hour = 0.58

\* Weight estimated from length-to-weight regression if available.

Table 27. Sampled Effort, Ranked Catch and CPUE for Area 045  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Hook-and-Line Gear. Catch Represents Only the Fish  
Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 56  
Total Hours Effort for Anglers Intercepted = 189.0  
Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Lingcod	1	56.09	16	14.8	16	3.51	666	130
Rockfish, Blue	2	12.50	34	31.5	32	0.37	276	63
Rockfish, China	3	7.04	9	8.3	9	0.78	345	30
Rockfish, Copper	4	7.00	4	3.7	4	1.75	449	68
Rockfish, Canary	5	6.47	12	11.1	12	0.54	329	40
Rockfish, Black	6	6.41	8	7.4	8	0.80	361	82
Greenling, Kelp	7	3.45	6	5.6	6	0.57	343	32
Rockfish, Yelloweye	8	2.81	1	0.9	1	2.81	532	0
Rockfish, Yellowtail	9	2.74	2	1.9	2	1.37	456	15
Rockfish, Vermilion	10	2.24	2	1.9	2	1.12	411	4
Cabezon	11	1.90	2	1.9	2	0.95	382	48
Sanddab, Pacific	12	1.00	10	9.3	10	0.10	208	30
Sole, Sand	13	0.47	1	0.9	1	0.47	331	0
Rockfish, Rosy	14	0.43	1	0.9	1	0.43	299	0
Total		110.54	108	100	106			

## C. CPUE\*\*\*

Catch per Angler Day = 1.93      Catch per Angler Hour = 0.57  
Kg per Angler Day = 1.97      Kg per Angler Hour = 0.58

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 28. Sampled Effort, Ranked Catch and CPUE for Area 045  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Spear Gear. Catch Represents All Fish Captured,  
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	5
Total Hours Effort for Anglers Intercepted	=	2.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Cabazon	1	1	%100.0
Total		1	100

C. CPUE

Catch per Angler Day	=	0.20	Catch per Angler Hour	=	0.40
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Table 29. Sampled Effort, Ranked Catch and CPUE for Area 045  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Spear Gear. Catch Represents Number Landed  
and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	5
Total Hours Effort for Anglers Intercepted	=	2.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Cabezon	1	1	%100.0	1.50	1.50
Total		1	100		1.50

C. CPUE

Catch per Angler Day	=	0.20	Catch per Angler Hour	=	0.40
Kg per Angler Day	=	0.30	Kg per Angler Hour	=	0.60

\* Weight estimated from length-to-weight regression if available.

Table 30. Sampled Effort, Ranked Catch and CPUE for Area 045  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Spear Gear. Catch Represents Only the Fish  
Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 5  
Total Hours Effort for Anglers Intercepted = 2.5  
Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Cabezon	1	1.50	1	%100.0	1	1.50	455	0
Total		1.50	1	100	1			

## C. CPUE\*\*\*

Catch per Angler Day = 0.20      Catch per Angler Hour = 0.40  
Kg per Angler Day = 0.30      Kg per Angler Hour = 0.60

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 31. Sampled Effort, Ranked Catch and CPUE for Area 097  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Hook-and-Line Gear. Catch Represents All Fish Captured,  
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	6
Total Hours Effort for Anglers Intercepted	=	27.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, China	1	2	28.6
Cabazon	2	2	28.6
Rockfish, Canary	3	1	14.3
Greenling, Kelp	4	1	14.3
Lingcod	5	1	14.3
Total		7	100

C. CPUE

Catch per Angler Day	=	1.17	Catch per Angler Hour	=	0.26
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Table 32. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 6  
 Total Hours Effort for Anglers Intercepted = 27.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Cabazon	1	2	66.7	1.67	3.34
Rockfish, Canary	2	1	33.3	0.42	0.42
Total		3	100		3.76

C. CPUE

Catch per Angler Day = 0.50      Catch per Angler Hour = 0.11  
 Kg per Angler Day = 0.63      Kg per Angler Hour = 0.14

\* Weight estimated from length-to-weight regression if available.

Table 33. Sampled Effort, Ranked Catch and CPUE for Area 097  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Hook-and-Line Gear. Catch Represents Only the Fish  
Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 6  
Total Hours Effort for Anglers Intercepted = 27.0  
Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Cabezon	1	3.34	2	66.7	2	1.67	470	59
Rockfish, Canary	2	0.42	1	33.3	1	0.42	308	0
Total		3.76	3	100	3			

## C. CPUE\*\*\*

Catch per Angler Day = 0.50      Catch per Angler Hour = 0.11  
Kg per Angler Day = 0.63      Kg per Angler Hour = 0.14

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).



Table 34. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	18
Total Hours Effort for Anglers Intercepted	=	105.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Chilipepper	1	128	61.5
Rockfish, Greenspotted	2	25	12.0
Rockfish, Yellowtail	3	20	9.6
Rockfish, Blue	4	14	6.7
Rockfish, Canary	5	5	2.4
Rockfish, Yelloweye	6	4	1.9
Rockfish, Brown	7	3	1.4
Rockfish, Black	8	2	1.0
Bocaccio	9	2	1.0
Lingcod	10	2	1.0
Rockfish, Copper	11	1	0.5
Rockfish, Greenstriped	12	1	0.5
Sole, Petrale	13	1	0.5
Total		208	100

C. CPUE

Catch per Angler Day	=	11.56	Catch per Angler Hour	=	1.97
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Table 35. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 18  
 Total Hours Effort for Anglers Intercepted = 105.5  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Chilipepper	1	128	61.5	0.82	105.28
Rockfish, Greenspotted	2	25	12.0	0.87	21.84
Rockfish, Yellowtail	3	20	9.6	1.11	22.14
Rockfish, Blue	4	14	6.7	0.29	4.10
Rockfish, Canary	5	5	2.4	1.13	5.63
Rockfish, Yelloweye	6	4	1.9	2.43	9.72
Rockfish, Brown	7	3	1.4	0.68	2.03
Rockfish, Black	8	2	1.0	0.38	0.76
Bocaccio	9	2	1.0	3.02	6.05
Lingcod	10	2	1.0	2.61	5.21
Rockfish, Copper	11	1	0.5	0.52	0.52
Rockfish, Greenstriped	12	1	0.5	0.39	0.39
Sole, Petrale	13	1	0.5	0.49	0.49
Total		208	100		184.12

#### C. CPUE

Catch per Angler Day = 11.56      Catch per Angler Hour = 1.97  
 Kg per Angler Day = 10.23      Kg per Angler Hour = 1.75

\* Weight estimated from length-to-weight regression if available.

Table 36. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

#### A. Sampled Effort

Number Anglers Intercepted = 18  
 Total Hours Effort for Anglers Intercepted = 105.5  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Chilipepper	1	105.28	128	61.5	109	0.82	400	10
Rockfish, Yellowtail	2	22.14	20	9.6	20	1.11	421	13
Rockfish, Greenspotted	3	21.84	25	12.0	25	0.97	375	16
Rockfish, Yelloweye	4	9.72	4	1.9	4	2.43	484	120
Bocaccio	5	6.05	2	1.0	2	3.02	654	42
Rockfish, Canary	6	5.63	5	2.4	5	1.13	407	95
Lingcod	7	5.21	2	1.0	2	2.61	517	80
Rockfish, Blue	8	4.10	14	6.7	14	0.29	263	23
Rockfish, Brown	9	2.03	3	1.4	3	0.68	335	24
Rockfish, Black	10	0.76	2	1.0	2	0.38	290	40
Rockfish, Copper	11	0.52	1	0.5	1	0.52	305	0
Sole, Petrale	12	0.49	1	0.5	1	0.49	340	0
Rockfish, Greenstriped	13	0.39	1	0.5	1	0.39	323	0
Total		184.12	208	100	189			

#### C. CPUE\*\*\*

Catch per Angler Day = 11.56      Catch per Angler Hour = 1.97  
 Kg per Angler Day = 10.23      Kg per Angler Hour = 1.75

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Figure 3. Length-Frequency Histogram for Chilipepper  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 097, Quarter 1, 1986.

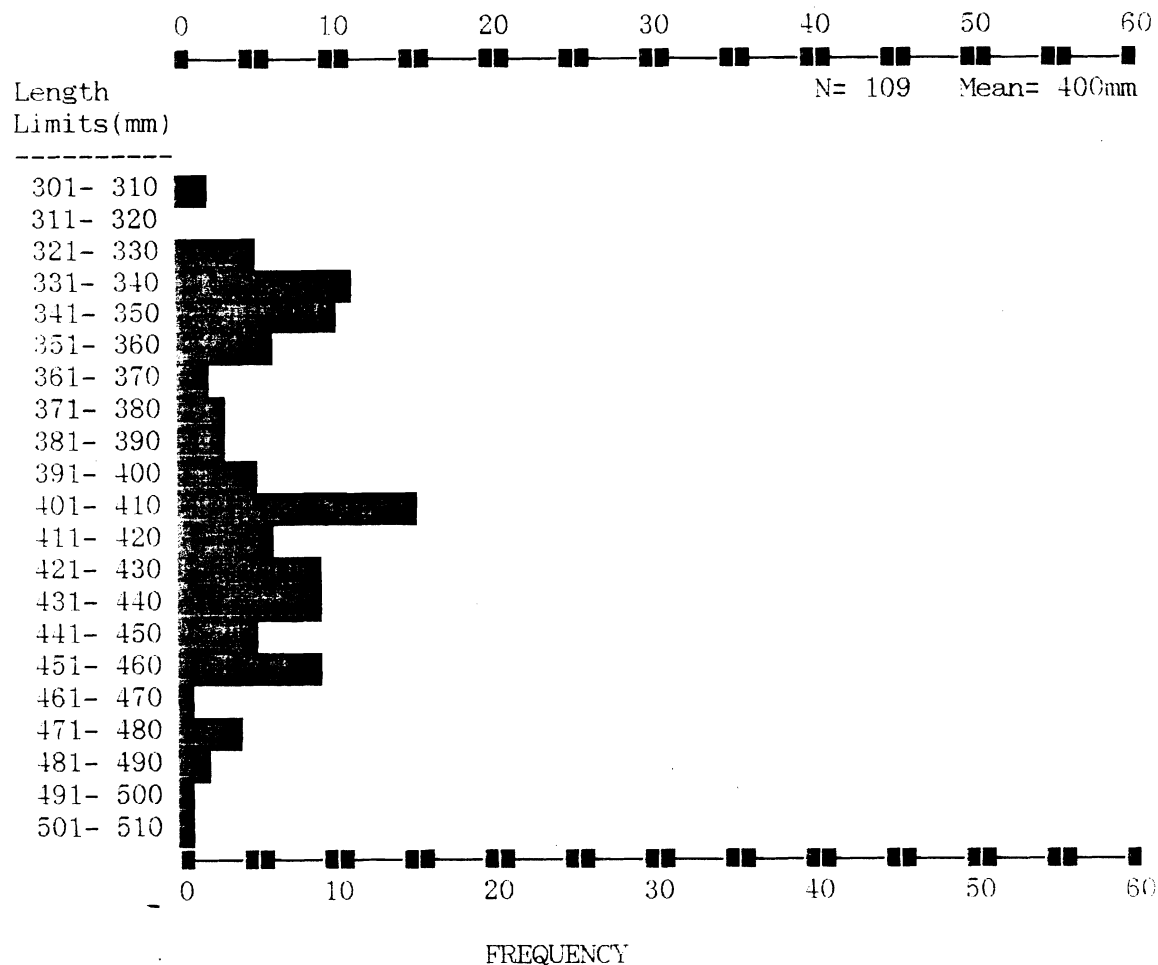


Table 37. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	8
Total Hours Effort for Anglers Intercepted	=	21.0
Total Hours Still to Fish (Incomplete Trips)	=	1.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	4	36.4
Surfperch, Barred	2	3	27.3
Unidentified Fishes	3	1	9.1
Sculpin, Pacific Staghorn	4	1	9.1
Surfperch, Silver	5	1	9.1
Flounders, Righteye	6	1	9.1
Total		11	100

#### C. CPUE

Catch per Angler Day = 1.38      Catch per Angler Hour = 0.52

Table 38. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	8
Total Hours Effort for Anglers Intercepted	=	21.0
Total Hours Still to Fish (Incomplete Trips)	=	1.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	4	44.4	0.12	0.48
Surfperch, Barred	2	3	33.3	0.09	0.26
Surfperch, Silver	3	1	11.1	0.21	0.21
Flounders, Righteye	4	1	11.1	0.02	0.02
Total		9	100		0.97

C. CPUE

Catch per Angler Day	=	1.13	Catch per Angler Hour	=	0.43
Kg per Angler Day	=	0.12	Kg per Angler Hour	=	0.05

\* Weight estimated from length-to-weight regression if available.

Table 39. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

#### A. Sampled Effort

Number Anglers Intercepted = 8  
 Total Hours Effort for Anglers Intercepted = 21.0  
 Total Hours Still to Fish (Incomplete Trips) = 1.0

#### B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Croaker, White	1	0.48	4	44.4	4	0.12	219	20
Surfperch, Barred	2	0.26	3	33.3	3	0.09	169	5
Surfperch, Silver	3	0.21	1	11.1	1	0.21	236	0
Flounders, Righteye	4	0.02	1	11.1	1	0.02	124	0
Total		0.97	9	100	9			

#### C. CPUE\*\*\*

Catch per Angler Day = 1.13      Catch per Angler Hour = 0.43  
 Kg per Angler Day = 0.12      Kg per Angler Hour = 0.05

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 40. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	9
Total Hours Effort for Anglers Intercepted	=	33.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperches	1	11	52.4
Cabezon	2	3	14.3
Rockfish, Brown	3	2	9.5
Sculpin, Pacific Staghorn	4	2	9.5
Rockfishes (general)	5	1	4.8
Rockfish, Kelp	6	1	4.8
Seaperch, White	7	1	4.8
Total		21	100

C. CPUE

Catch per Angler Day	=	2.33	Catch per Angler Hour	=	0.64
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Table 41. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 9  
 Total Hours Effort for Anglers Intercepted = 33.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperches	1	11	68.8	0.20**	2.20
Sculpin, Pacific Staghorn	2	2	12.5	0.09	0.18
Rockfish, Kelp	3	1	6.3	0.99	0.99
Cabezon	4	1	6.3	0.93	0.93
Seaperch, White	5	1	6.3	0.20	0.20
Total		16	100		4.49

#### C. CPUE

Catch per Angler Day = 1.78      Catch per Angler Hour = 0.48  
 Kg per Angler Day = 0.50      Kg per Angler Hour = 0.14

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 42. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

#### A. Sampled Effort

Number Anglers Intercepted = 9  
 Total Hours Effort for Anglers Intercepted = 33.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Kelp	1	0.99	1	20.0	1	0.99	410	0
Cabazon	2	0.93	1	20.0	1	0.93	382	0
Seaperch, White	3	0.20	1	20.0	1	0.20	254	0
Sculpin, Pacific Staghorn	4	0.18	2	40.0	2	0.09	204	13
Total		2.29	5	100	5			

#### C. CPUE\*\*\*

Catch per Angler Day = 0.56      Catch per Angler Hour = 0.15  
 Kg per Angler Day = 0.25      Kg per Angler Hour = 0.07

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 43. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	6
Total Hours Effort for Anglers Intercepted	=	12.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
-----			
-----			
Total		0	0

C. CPUE

Catch per Angler Day	=	0.00	Catch per Angler Hour	=	0.00
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Table 44. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	6
Total Hours Effort for Anglers Intercepted	=	12.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
-----					
Total		0	0		0.00

C. CPUE

Catch per Angler Day	=	0.00	Catch per Angler Hour	=	0.00
Kg per Angler Day	=	0.00	Kg per Angler Hour	=	0.00

\* Weight estimated from length-to-weight regression if available.

Table 45. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 6  
 Total Hours Effort for Anglers Intercepted = 12.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Total		0.00	0	0	0			

C. CPUE\*\*\*

Catch per Angler Day = 0.00      Catch per Angler Hour = 0.00  
 Kg per Angler Day = 0.00      Kg per Angler Hour = 0.00

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 46. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	8
Total Hours Effort for Anglers Intercepted	=	53.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	24	45.3
Rockfish, Brown	2	12	22.6
Rockfish, Canary	3	11	20.8
Lingcod	4	2	3.8
Rockfish, Copper	5	1	1.9
Rockfish, Vermilion	6	1	1.9
Rockfish, China	7	1	1.9
Rockfish, Gopher	8	1	1.9
Total		53	100

#### C. CPUE

Catch per Angler Day	=	6.63	Catch per Angler Hour	=	1.00
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Table 47. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 8  
 Total Hours Effort for Anglers Intercepted = 53.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	17	37.0	0.62	10.54
Rockfish, Brown	2	12	26.1	0.52	6.27
Rockfish, Canary	3	11	23.9	0.40	4.37
Lingcod	4	2	4.3	0.00**	0.00
Rockfish, Copper	5	1	2.2	2.01	2.01
Rockfish, Vermilion	6	1	2.2	0.00**	0.00
Rockfish, China	7	1	2.2	0.00**	0.00
Rockfish, Gopher	8	1	2.2	0.53	0.53
Total		46	100		23.72

#### C. CPUE

Catch per Angler Day = 5.75      Catch per Angler Hour = 0.87  
 Kg per Angler Day = 2.97      Kg per Angler Hour = 0.45

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 48. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 8  
 Total Hours Effort for Anglers Intercepted = 53.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Brown	1	6.27	12	48.0	10	0.52	301	50
Rockfish, Canary	2	3.57	9	36.0	9	0.40	298	34
Rockfish, Copper	3	2.01	1	4.0	1	2.01	478	0
Rockfish, Blue	4	1.24	2	8.0	2	0.62	342	40
Rockfish, Gopher	5	0.53	1	4.0	1	0.53	322	0
Total		13.63	25	100	23			

## C. CPUE\*\*\*

Catch per Angler Day = 3.13      Catch per Angler Hour = 0.47  
 Kg per Angler Day = 1.70      Kg per Angler Hour = 0.26

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).



Table 49. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted = 50  
 Total Hours Effort for Anglers Intercepted = 242.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	196	28.5
Rockfish, Yellowtail	2	133	19.3
Mackerel, Pacific (Chub)	3	95	13.8
Rockfish, Rosy	4	52	7.6
Rockfish, Olive	5	41	6.0
Rockfish, Widow	6	36	5.2
Lingcod	7	35	5.1
Bocaccio	8	29	4.2
Rockfish, Starry	9	21	3.1
Rockfish, Canary	10	14	2.0
Rockfishes (general)	11	9	1.3
Rockfish, Yelloweye	12	6	0.9
Rockfish, Speckled	13	5	0.7
Salmon, Chinook (King)	14	4	0.6
Rockfish, Greenspotted	15	4	0.6
Rockfish, Brown	16	2	0.3
Jack Mackerel	17	2	0.3
Rockfish, Quillback	18	1	0.1
Rockfish, Vermilion	19	1	0.1
Rockfish, Flag	20	1	0.1
Sculpin, Pacific Staghorn	21	1	0.1
Total		688	100

#### C. CPUE

Catch per Angler Day = 13.76      Catch per Angler Hour = 2.84

Table 50. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

## A. Sampled Effort

Number Anglers Intercepted = 50  
 Total Hours Effort for Anglers Intercepted = 242.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	187	30.7	0.54	100.65
Rockfish, Yellowtail	2	133	21.8	0.90	120.22
Rockfish, Rosy	3	48	7.9	0.24	11.63
Rockfish, Olive	4	41	6.7	0.75	30.72
Mackerel, Pacific (Chub)	5	37	6.1	0.70	25.79
Rockfish, Widow	6	36	5.9	0.38	13.51
Lingcod	7	31	5.1	3.46	107.38
Bocaccio	8	29	4.8	2.65	76.76
Rockfish, Starry	9	21	3.4	0.84	17.72
Rockfish, Canary	10	14	2.3	0.68	9.50
Rockfishes (general)	11	6	1.0	0.77**	4.62
Rockfish, Yelloweye	12	6	1.0	2.06	12.38
Rockfish, Speckled	13	5	0.8	0.97	4.85
Salmon, Chinook (King)	14	4	0.7	2.45	9.79
Rockfish, Greenspotted	15	4	0.7	0.70	2.78
Rockfish, Brown	16	2	0.3	0.53	1.07
Jack Mackerel	17	2	0.3	0.71	1.42
Rockfish, Quillback	18	1	0.2	0.51	0.51
Rockfish, Vermilion	19	1	0.2	1.42	1.42
Rockfish, Flag	20	1	0.2	0.73	0.73
Total		609	100		553.44

## C. CPUE

Catch per Angler Day = 12.18      Catch per Angler Hour = 2.52  
 Kg per Angler Day = 11.07      Kg per Angler Hour = 2.29

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 51. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 50  
 Total Hours Effort for Anglers Intercepted = 242.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Yellowtail	1	120.22	133	22.1	120	0.90	396	67
Lingcod	2	107.38	31	5.1	31	3.46	677	67
Rockfish, Blue	3	100.65	187	31.0	154	0.54	320	51
Bocaccio	4	76.76	29	4.8	29	2.65	609	116
Rockfish, Olive	5	30.72	41	6.8	35	0.75	380	46
Mackerel, Pacific (Chub)	6	25.79	37	6.1	36	0.70	366	28
Rockfish, Starry	7	17.72	21	3.5	21	0.84	355	70
Rockfish, Widow	8	13.51	36	6.0	36	0.38	300	52
Rockfish, Yelloweye	9	12.38	6	1.0	6	2.06	461	104
Rockfish, Rosy	10	11.63	48	8.0	48	0.24	242	30
Salmon, Chinook (King)	11	9.79	4	0.7	4	2.45	631	75
Rockfish, Canary	12	9.50	14	2.3	14	0.68	354	47
Rockfish, Speckled	13	4.85	5	0.8	5	0.97	404	22
Rockfish, Greenspotted	14	2.78	4	0.7	4	0.70	346	54
Rockfish, Vermilion	15	1.42	1	0.2	1	1.42	145	0
Jack Mackerel	16	1.42	2	0.3	2	0.71	383	30
Rockfish, Brown	17	1.07	2	0.3	2	0.53	309	35
Rockfish, Flag	18	0.73	1	0.2	1	0.73	352	0
Rockfish, Quillback	19	0.51	1	0.2	1	0.51	294	0
Total		548.82	603	100	550			

## C. CPUE\*\*\*

Catch per Angler Day = 12.06      Catch per Angler Hour = 2.49  
 Kg per Angler Day = 10.98      Kg per Angler Hour = 2.27

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Figure 4. Length-Frequency Histogram for Pacific (Chub) Mackerel  
Taken by All CPFV Anglers Using Hook-and-Line Gear.  
Area 3 (Ocean), Quarter 1, 1986.

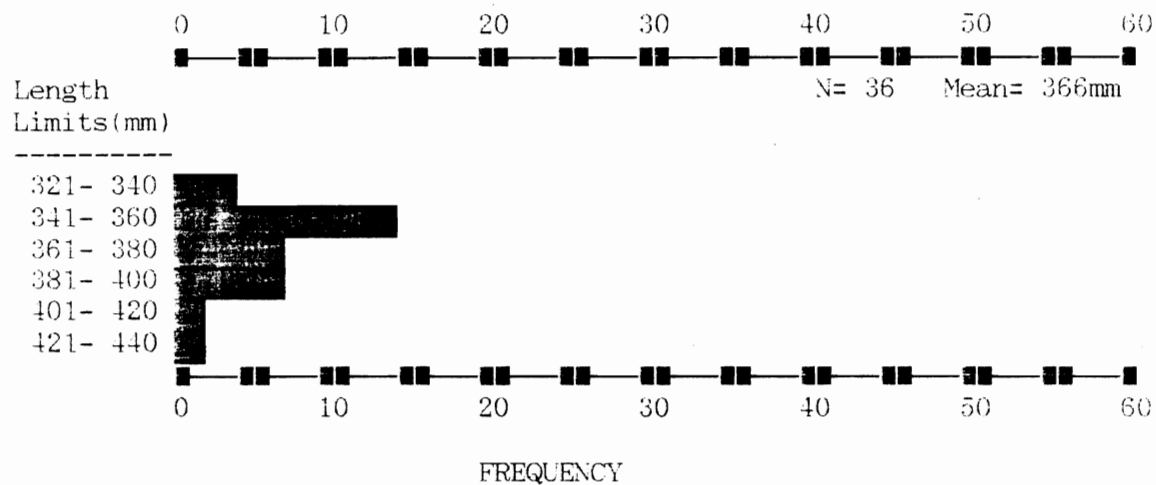


Figure 5. Length-Frequency Histogram for Blue Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 3 (Ocean), Quarter 1, 1986.

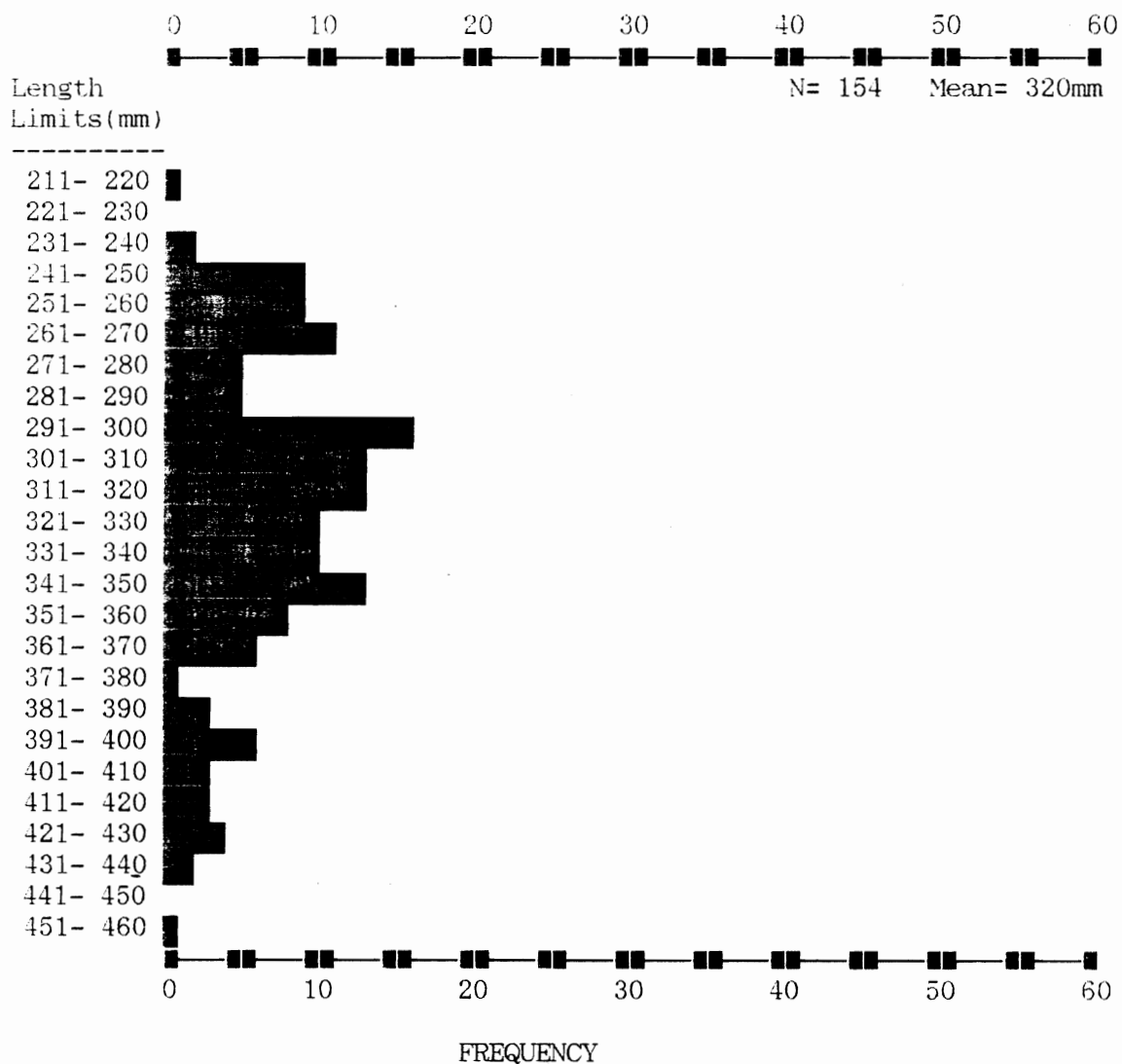


Figure 6. Length-Frequency Histogram for Rosy Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 3 (Ocean), Quarter 1, 1986.

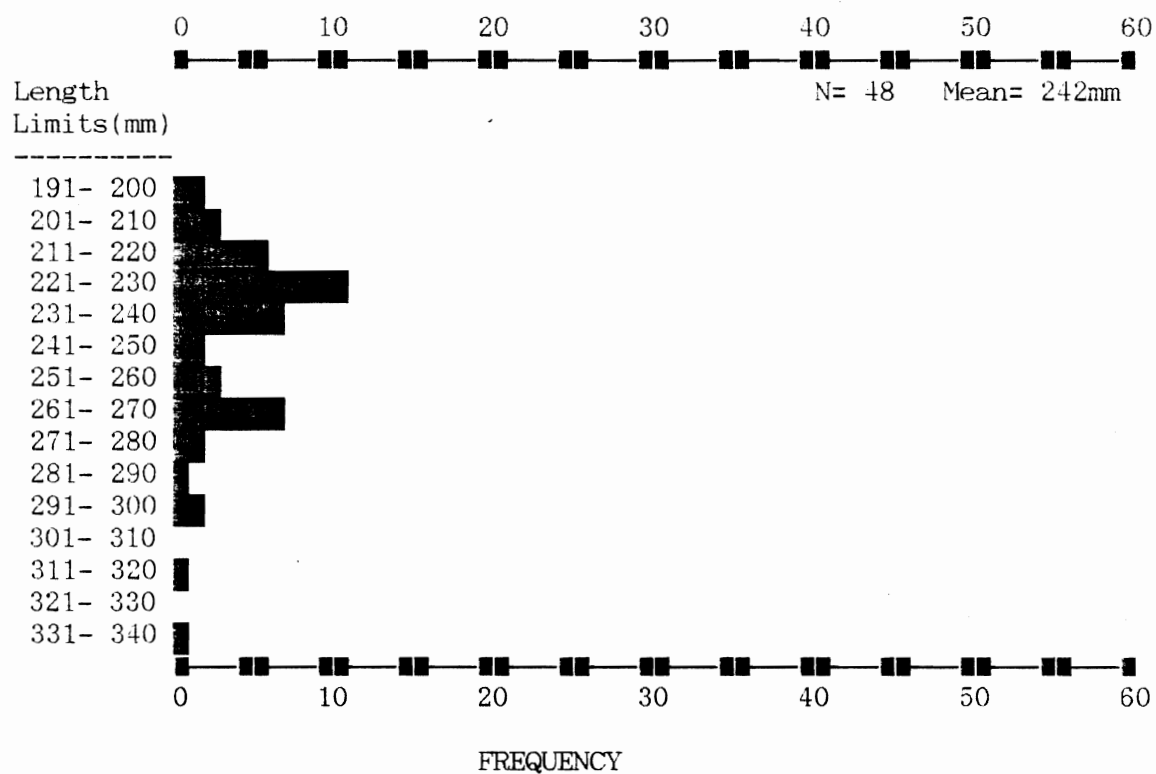


Figure 7. Length-Frequency Histogram for Yellowtail Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 3 (Ocean), Quarter 1, 1986.

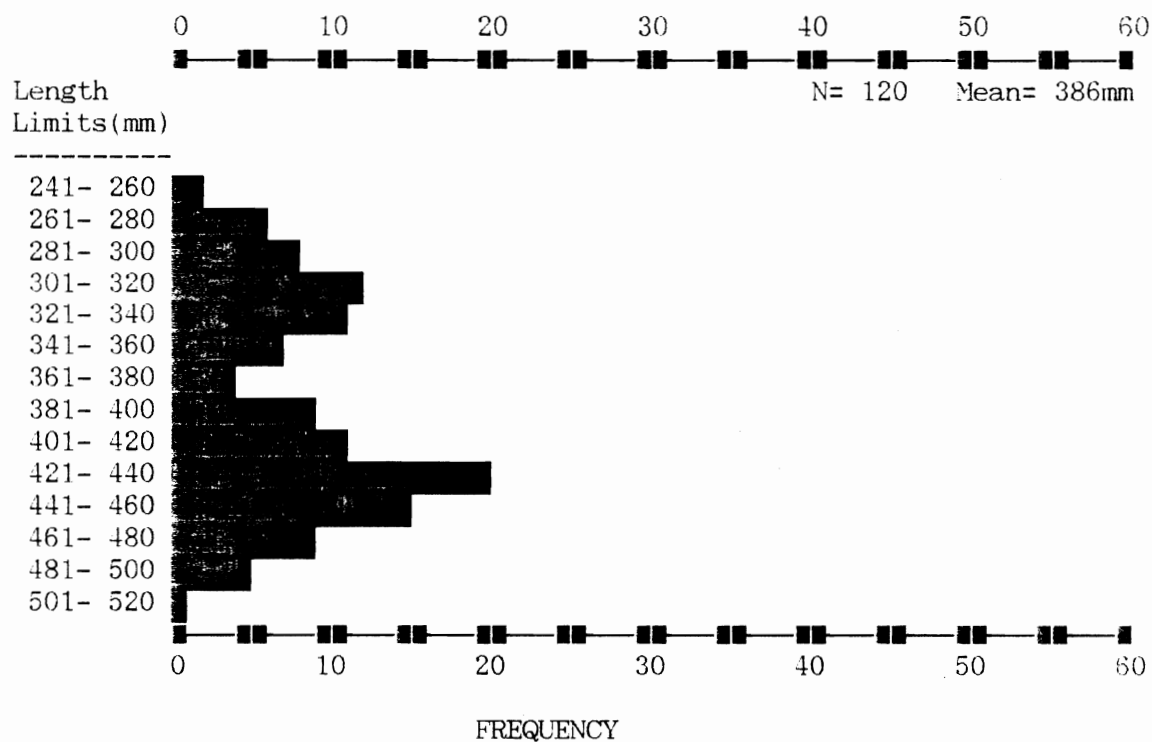


Table 52. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	223
Total Hours Effort for Anglers Intercepted	=	772.5
Total Hours Still to Fish (Incomplete Trips)	=	4.5

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	135	37.4
Perch, Shiner	2	47	13.0
Perch, Black	3	40	11.1
Surfperch, Walleye	4	35	9.7
Surfperches	5	19	5.3
Flounder, Starry	6	18	5.0
Rockfish, Brown	7	13	3.6
Croaker, White	8	12	3.3
Seaperch, Rainbow	9	12	3.3
Seaperch, Rubberlip	10	9	2.5
Bass, Striped	11	6	1.7
Seaperch, White	12	6	1.7
Rockfishes (general)	13	2	0.6
Surfperch, Barred	14	2	0.6
Unidentified Fishes	15	1	0.3
Shark, Leopard	16	1	0.3
Lingcod	17	1	0.3
Perch, Pile	18	1	0.3
Prickleback, Monkeyface	19	1	0.3
Total		361	100

#### C. CPUE

Catch per Angler Day	=	1.62	Catch per Angler Hour	=	0.47
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Table 53. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 223  
 Total Hours Effort for Anglers Intercepted = 772.5  
 Total Hours Still to Fish (Incomplete Trips) = 4.5

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Perch, Black	1	40	21.2	0.11	4.27
Surfperch, Walleye	2	35	18.5	0.32	11.29
Perch, Shiner	3	34	18.0	0.04	1.30
Flounder, Starry	4	18	9.5	0.20	3.52
Croaker, White	5	12	6.3	0.27	3.29
Seaperch, Rainbow	6	12	6.3	0.20	2.41
Seaperch, Rubberlip	7	9	4.8	0.30	2.69
Seaperch, White	8	6	3.2	0.18	1.09
Rockfish, Brown	9	4	2.1	0.09	0.35
Sculpin, Pacific Staghorn	10	4	2.1	0.02	0.08
Bass, Striped	11	4	2.1	1.27	5.07
Surfperches	12	3	1.6	0.17**	0.51
Rockfishes (general)	13	2	1.1	0.09**	0.18
Surfperch, Barred	14	2	1.1	0.05	0.09
Shark, Leopard	15	1	0.5	3.98	3.98
Lingcod	16	1	0.5	0.52	0.52
Perch, Pile	17	1	0.5	0.04	0.04
Prickleback, Monkeyface	18	1	0.5	0.00**	0.00
Total		189	100		40.70

#### C. CPUE

Catch per Angler Day = 0.85      Catch per Angler Hour = 0.24  
 Kg per Angler Day = 0.18      Kg per Angler Hour = 0.05

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 54. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 223  
 Total Hours Effort for Anglers Intercepted = 772.5  
 Total Hours Still to Fish (Incomplete Trips) = 4.5

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Walleye	1	11.29	35	19.8	35	0.32	217	80
Bass, Striped	2	5.07	4	2.3	4	1.27	583	118
Perch, Black	3	4.27	40	22.6	40	0.11	162	40
Shark, Leopard	4	3.98	1	0.6	1	3.98	750	0
Flounder, Starry	5	3.52	18	10.2	18	0.20	247	57
Seaperch, Rubberlip	6	2.69	9	5.1	9	0.30	236	61
Seaperch, Rainbow	7	2.41	12	6.8	12	0.20	210	60
Croaker, White	8	1.37	5	2.8	5	0.27	286	30
Perch, Shiner	9	1.30	34	19.2	25	0.04	135	30
Seaperch, White	10	1.09	6	3.4	6	0.18	237	55
Lingcod	11	0.52	1	0.6	1	0.52	362	0
Rockfish, Brown	12	0.35	4	2.3	4	0.09	165	29
Surfperch, Barred	13	0.09	2	1.1	2	0.05	137	22
Perch, Pile	14	0.04	1	0.6	1	0.04	142	0
Sculpin, Pacific Staghorn	15	0.02	1	0.6	1	0.02	125	0
Surfperches	16	0.00	3	1.7	3	0.00	263	40
Prickleback, Monkeyface	17	0.00	1	0.6	1	0.00	443	0
Total		38.02	177	100	168			

## C. CPUE\*\*\*

Catch per Angler Day = 0.79      Catch per Angler Hour = 0.23  
 Kg per Angler Day = 0.17      Kg per Angler Hour = 0.05

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 55. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	17
Total Hours Effort for Anglers Intercepted	=	34.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	4	50.0
Jacksmelt	2	1	12.5
Sculpin, Pacific Staghorn	3	1	12.5
Surfperches	4	1	12.5
Prickleback, Monkeyface	5	1	12.5
Total		8	100

C. CPUE

Catch per Angler Day	=	0.47	Catch per Angler Hour	=	0.23
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Table 56. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 17  
 Total Hours Effort for Anglers Intercepted = 34.5  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Prickleback, Monkeyface	1	1	%100.0	0.00**	0.00
Total		1	100		0.00

#### C. CPUE

Catch per Angler Day = 0.06      Catch per Angler Hour = 0.03  
 Kg per Angler Day = 0.00      Kg per Angler Hour = 0.00

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 57. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

#### A. Sampled Effort

Number Anglers Intercepted = 17  
 Total Hours Effort for Anglers Intercepted = 34.5  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	[---Mean---]		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Prickleback, Monkeyface	1	0.00	1	%100.0	1	0.00	583	0
Total		0.00	1	100	1			

#### C. CPUE\*\*\*

Catch per Angler Day = 0.06      Catch per Angler Hour = 0.03  
 Kg per Angler Day = 0.00      Kg per Angler Hour = 0.00

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 58. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	179
Total Hours Effort for Anglers Intercepted	=	649.0
Total Hours Still to Fish (Incomplete Trips)	=	8.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Jacksmelt	1	31	19.5
Bass, Striped	2	23	14.5
Sculpin, Pacific Staghorn	3	19	11.9
Surfperches	4	13	8.2
Perch, Black	5	11	6.9
Perch, Shiner	6	10	6.3
Seaperch, White	7	7	4.4
Perch, Pile	8	7	4.4
Flounder, Starry	9	7	4.4
Shark, Leopard	10	6	3.8
Surfperch, Walleye	11	6	3.8
Unidentified Fishes	12	5	3.1
Surfperch, Barred	13	5	3.1
Seaperch, Rubberlip	14	3	1.9
Croaker, White	15	2	1.3
Greenling, Kelp	16	1	0.6
Cabezon	17	1	0.6
Seaperch, Striped	18	1	0.6
Fringehead, Onespot	19	1	0.6
Total		159	100

#### C. CPUE

Catch per Angler Day = 0.89      Catch per Angler Hour = 0.24

Table 59. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 179  
 Total Hours Effort for Anglers Intercepted = 649.0  
 Total Hours Still to Fish (Incomplete Trips) = 8.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Jacksmelt	1	31	31.3	0.35	10.71
Perch, Black	2	11	11.1	0.13	1.43
Perch, Shiner	3	8	8.1	0.03	0.26
Surfperches	4	7	7.1	0.21**	1.47
Seaperch, White	5	7	7.1	0.25	1.78
Perch, Pile	6	7	7.1	0.48	3.34
Flounder, Starry	7	7	7.1	0.35	2.46
Bass, Striped	8	6	6.1	0.79	4.72
Surfperch, Walleye	9	6	6.1	0.04	0.25
Surfperch, Barred	10	5	5.1	0.42	2.10
Greenling, Kelp	11	1	1.0	0.37	0.37
Cabazon	12	1	1.0	0.62	0.62
Seaperch, Striped	13	1	1.0	0.31	0.31
Seaperch, Rubberlip	14	1	1.0	0.15	0.15
Total		99	100		29.96

#### C. CPUE

Catch per Angler Day = 0.55      Catch per Angler Hour = 0.15  
 Kg per Angler Day = 0.17      Kg per Angler Hour = 0.05

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 60. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 179  
 Total Hours Effort for Anglers Intercepted = 649.0  
 Total Hours Still to Fish (Incomplete Trips) = 8.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Jacksmelt	1	10.36	30	31.3	30	0.35	351	22
Bass, Striped	2	4.72	6	6.3	6	0.79	478	142
Perch, Pile	3	3.34	7	7.3	8	0.48	302	45
Flounder, Starry	4	2.46	7	7.3	7	0.35	291	79
Surfperch, Barred	5	2.10	5	5.2	5	0.42	279	23
Seaperch, White	6	1.78	7	7.3	7	0.25	272	36
Perch, Black	7	1.43	11	11.5	11	0.13	181	25
Cabazon	8	0.62	1	1.0	1	0.62	328	0
Greenling, Kelp	9	0.37	1	1.0	1	0.37	298	0
Seaperch, Striped	10	0.31	1	1.0	1	0.31	267	0
Perch, Shiner	11	0.26	8	8.3	8	0.03	131	23
Surfperch, Walleye	12	0.25	6	6.3	6	0.04	142	30
Seaperch, Rubberlip	13	0.15	1	1.0	1	0.15	196	0
Surfperches	14	0.00	5	5.2	5	0.00	257	21
Total		28.15	96	100	97			

## C. CPUE\*\*\*

Catch per Angler Day = 0.54      Catch per Angler Hour = 0.15  
 Kg per Angler Day = 0.16      Kg per Angler Hour = 0.04

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).



Table 61. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

## A. Sampled Effort

Number Anglers Intercepted = 325  
 Total Hours Effort for Anglers Intercepted = 1743.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	447	30.9
Seaperch, Rubberlip	2	347	24.0
Seaperch, White	3	329	22.7
Sharks	4	67	4.6
Sturgeon, White	5	45	3.1
Croaker, White	6	42	2.9
Sturgeons (general)	7	38	2.6
Shark, Leopard	8	34	2.3
Bass, Striped	9	24	1.7
Flounder, Starry	10	16	1.1
Perch, Pile	11	15	1.0
Jacksmelt	12	13	0.9
Skates	13	8	0.6
Rockfish, Brown	14	6	0.4
Ray, Bat	15	5	0.3
Unidentified Fishes	16	2	0.1
Perch, Black	17	2	0.1
Skate, Big	18	1	0.1
Stingrays	19	1	0.1
Sturgeon, Green	20	1	0.1
Rockfishes (general)	21	1	0.1
Surfperches	22	1	0.1
Seaperch, Striped	23	1	0.1
Surfperch, Barred	24	1	0.1
Total		1447	100

## C. CPUE

Catch per Angler Day = 4.45      Catch per Angler Hour = 0.83

Table 62. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

## A. Sampled Effort

Number Anglers Intercepted = 325  
 Total Hours Effort for Anglers Intercepted = 1743.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Seaperch, Rubberlip	1	347	44.0	0.83	288.82
Seaperch, White	2	329	41.7	0.27	88.24
Sturgeon, White	3	41	5.2	13.34	547.13
Perch, Pile	4	15	1.9	0.49	7.35
Bass, Striped	5	14	1.8	1.43	19.99
Flounder, Starry	6	12	1.5	0.60	7.25
Jacksmelt	7	10	1.3	0.23	2.35
Croaker, White	8	8	1.0	0.36	2.87
Sturgeons (general)	9	4	0.5	11.28	45.11
Rockfish, Brown	10	3	0.4	0.34	1.01
Perch, Black	11	2	0.3	0.18	0.37
Sturgeon, Green	12	1	0.1	29.00	29.00
Sculpin, Pacific Staghorn	13	1	0.1	0.00**	0.00
Seaperch, Striped	14	1	0.1	0.43	0.43
Surfperch, Barred	15	1	0.1	0.73	0.73
Total		789	100		1040.63

## C. CPUE

Catch per Angler Day = 2.43      Catch per Angler Hour = 0.45  
 Kg per Angler Day = 3.20      Kg per Angler Hour = 0.60

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 63. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay)  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Hook-and-Line Gear. Catch Represents Only the Fish  
Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 325  
Total Hours Effort for Anglers Intercepted = 1743.0  
Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Sturgeon, White	1	547.13	41	5.2	41	13.34	1190	298
Seaperch, Rubberlip	2	288.82	347	44.1	3	0.83	352	27
Seaperch, White	3	88.24	329	41.8	14	0.27	277	37
Sturgeons (general)	4	33.83	3	0.4	3	11.28	1193	183
Sturgeon, Green	5	29.00	1	0.1	1	29.00	1611	0
Bass, Striped	6	19.99	14	1.8	14	1.43	597	138
Perch, Pile	7	7.35	15	1.9	15	0.49	308	28
Flounder, Starry	8	7.25	12	1.5	12	0.60	352	73
Croaker, White	9	2.87	8	1.0	8	0.36	311	41
Jacksmelt	10	2.35	10	1.3	10	0.23	311	32
Rockfish, Brown	11	1.01	3	0.4	3	0.34	254	68
Surfperch, Barred	12	0.73	1	0.1	1	0.73	335	0
Seaperch, Striped	13	0.43	1	0.1	1	0.43	297	0
Perch, Black	14	0.37	2	0.3	2	0.18	210	11
Total		1029.35	787	100	128			

## C. CPUE\*\*\*

Catch per Angler Day = 2.42      Catch per Angler Hour = 0.45  
Kg per Angler Day = 3.17      Kg per Angler Hour = 0.59

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 64. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	45
Total Hours Effort for Anglers Intercepted	=	303.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	27	40.3
Bass, Striped	2	27	40.3
Sturgeon, White	3	4	6.0
Flounder, Starry	4	3	4.5
Sturgeon, Green	5	2	3.0
Shark, Leopard	6	1	1.5
Skates	7	1	1.5
Sturgeons (general)	8	1	1.5
Croaker, White	9	1	1.5
Total		67	100

C. CPUE

Catch per Angler Day	=	1.49	Catch per Angler Hour	=	0.22
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Table 65. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 45  
 Total Hours Effort for Anglers Intercepted = 303.5  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Sturgeon, White	1	4	50.0	13.21	52.84
Flounder, Starry	2	3	37.5	0.52	1.57
Bass, Striped	3	1	12.5	0.84	0.84
Total		8	100		55.25

C. CPUE

Catch per Angler Day = 0.18      Catch per Angler Hour = 0.03  
 Kg per Angler Day = 1.23      Kg per Angler Hour = 0.18

\* Weight estimated from length-to-weight regression if available.

Table 66. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

#### A. Sampled Effort

Number Anglers Intercepted = 45  
 Total Hours Effort for Anglers Intercepted = 303.5  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	[---Mean---]		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Sturgeon, White	1	52.84	4	50.0	4	13.21	1273	40
Flounder, Starry	2	1.57	3	37.5	3	0.52	340	75
Bass, Striped	3	0.84	1	12.5	1	0.84	520	0
Total		55.25	8	100	8			

#### C. CPUE\*\*\*

Catch per Angler Day = 0.18      Catch per Angler Hour = 0.03  
 Kg per Angler Day = 1.23      Kg per Angler Hour = 0.18

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Figure 8. Length-Frequency Histogram for Black Perch  
 Taken by Pier or Dock Anglers Using Hook-and-Line Gear.  
 Area 3 (Bay), Quarter 1, 1986.

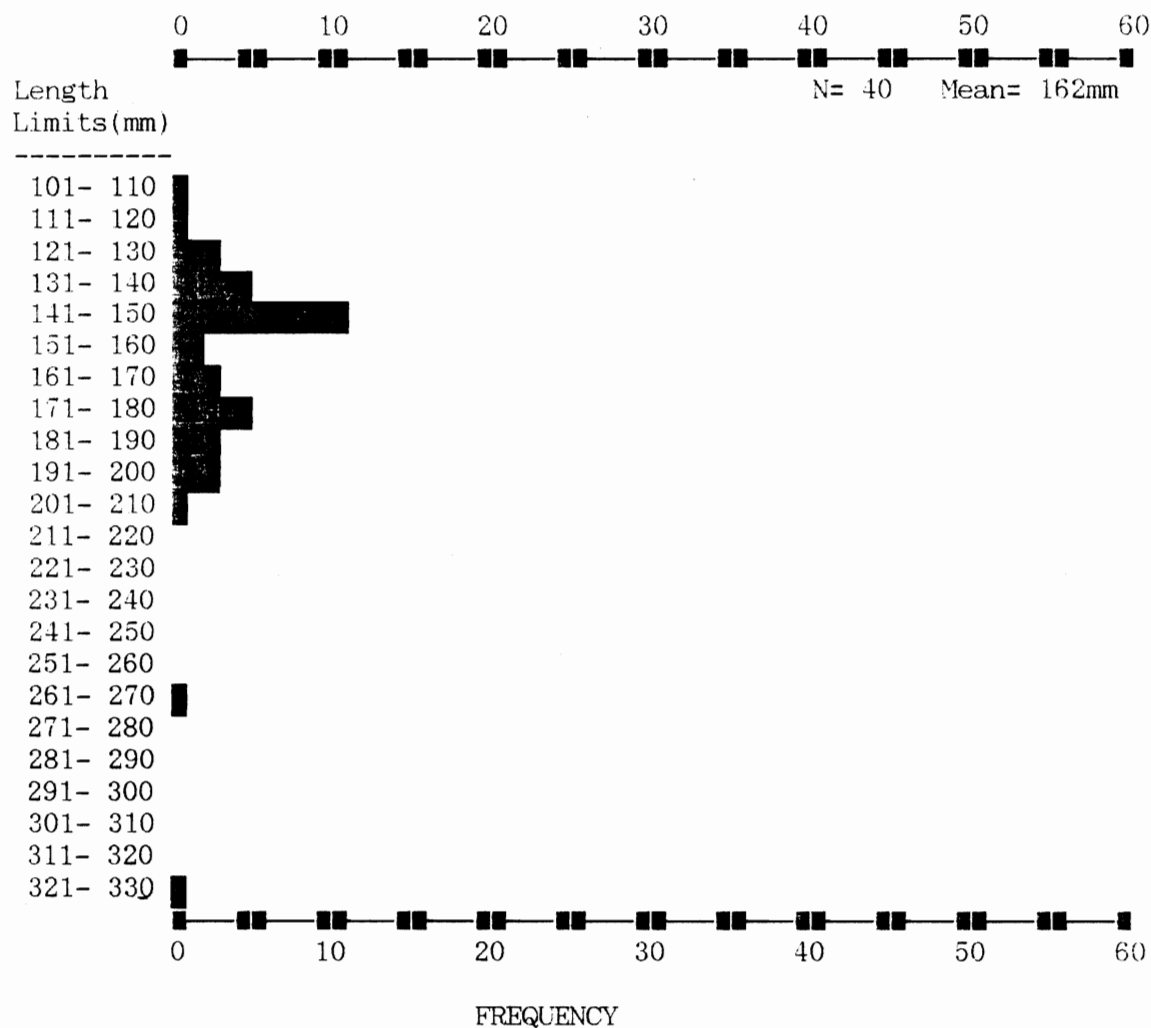


Table 67. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	63
Total Hours Effort for Anglers Intercepted	=	218.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	38	38.8
Unidentified Fishes	2	14	14.3
Croaker, White	3	8	8.2
Surfperches	4	7	7.1
Perch, Black	5	6	6.1
Seaperch, Rainbow	6	6	6.1
Seaperch, White	7	5	5.1
Flounders, Lefteye	8	5	5.1
Surfperch, Walleye	9	3	3.1
Rockfishes (general)	10	2	2.0
Rockfish, Brown	11	2	2.0
Rockfish, Black	12	1	1.0
Lingcod	13	1	1.0
Total		98	100

#### C. CPUE

Catch per Angler Day	=	1.56	Catch per Angler Hour	=	0.45
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Table 68. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 63  
 Total Hours Effort for Anglers Intercepted = 218.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	8	19.5	0.16	1.24
Perch, Black	2	6	14.6	0.16	0.95
Seaperch, Rainbow	3	6	14.6	0.15	0.88
Seaperch, White	4	5	12.2	0.18	0.91
Surfperches	5	4	9.8	0.16**	0.64
Sculpin, Pacific Staghorn	6	3	7.3	0.00**	0.00
Surfperch, Walleye	7	3	7.3	0.13	0.40
Rockfishes (general)	8	2	4.9	0.05	0.10
Rockfish, Brown	9	2	4.9	0.09	0.17
Rockfish, Black	10	1	2.4	0.17	0.17
Lingcod	11	1	2.4	0.25	0.25
Total		41	100		5.71

#### C. CPUE

Catch per Angler Day = 0.65      Catch per Angler Hour = 0.19  
 Kg per Angler Day = 0.09      Kg per Angler Hour = 0.03

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 69. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

#### A. Sampled Effort

Number Anglers Intercepted = 63  
 Total Hours Effort for Anglers Intercepted = 218.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	[---Mean---]		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Perch, Black	1	0.95	6	20.0	6	0.16	198	12
Seaperch, White	2	0.91	5	16.7	5	0.18	243	35
Seaperch, Rainbow	3	0.88	6	20.0	6	0.15	207	27
Croaker, White	4	0.62	4	13.3	4	0.16	237	28
Surfperch, Walleye	5	0.40	3	10.0	3	0.13	203	8
Lingcod	6	0.25	1	3.3	1	0.25	232	0
Rockfish, Brown	7	0.17	2	6.7	2	0.09	167	9
Rockfish, Black	8	0.17	1	3.3	1	0.17	221	0
Rockfishes (general)	9	0.10	2	6.7	2	0.05	164	23
Total		4.45	30	100	30			

#### C. CPUE\*\*\*

Catch per Angler Day = 0.48      Catch per Angler Hour = 0.14  
 Kg per Angler Day = 0.07      Kg per Angler Hour = 0.02

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 70. Sampled Effort, Ranked Catch and CPUE for Area 4  
in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using  
Hook-and-Line Gear. Catch Represents All Fish Captured,  
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	5
Total Hours Effort for Anglers Intercepted	=	5.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Unidentified Fishes	1	2	%100.0
Total		2	100

C. CPUE

Catch per Angler Day	=	0.40	Catch per Angler Hour	=	0.36
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Table 71. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted	=	5
Total Hours Effort for Anglers Intercepted	=	5.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Unidentified Fishes	1	1	%100.0	0.00**	0.00
Total		1	100		0.00

#### C. CPUE

Catch per Angler Day	=	0.20	Catch per Angler Hour	=	0.18
Kg per Angler Day	=	0.00	Kg per Angler Hour	=	0.00

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 72. Sampled Effort, Ranked Catch and CPUE for Area 4  
in 1986 for Quarter 1, by Jetty or Breakwater Anglers Using  
Hook-and-Line Gear. Catch Represents Only the Fish  
Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 5  
Total Hours Effort for Anglers Intercepted = 5.5  
Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Total		0.00	0	0	0			

C. CPUE\*\*\*

Catch per Angler Day = 0.00      Catch per Angler Hour = 0.00  
Kg per Angler Day = 0.00      Kg per Angler Hour = 0.00

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 73. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 96  
 Total Hours Effort for Anglers Intercepted = 300.4  
 Total Hours Still to Fish (Incomplete Trips) = 14.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Barred	1	124	66.7
Surfperches	2	25	13.4
Surfperch, Silver	3	17	9.1
Sculpin, Pacific Staghorn	4	7	3.8
Surfperch, Calico	5	6	3.2
Surfperch, Walleye	6	4	2.2
Sharks	7	1	0.5
Perch, Black	8	1	0.5
Flounder, Starry	9	1	0.5
Total		186	100

C. CPUE

Catch per Angler Day = 1.94      Catch per Angler Hour = 0.62

Table 74. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 96  
 Total Hours Effort for Anglers Intercepted = 300.4  
 Total Hours Still to Fish (Incomplete Trips) = 14.5

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Barred	1	119	79.3	0.35	41.96
Surfperch, Silver	2	17	11.3	0.09	1.58
Surfperch, Calico	3	6	4.0	0.19	1.12
Surfperch, Walleye	4	4	2.7	0.24	0.97
Sculpin, Pacific Staghorn	5	1	0.7	0.00**	0.00
Surfperches	6	1	0.7	0.31**	0.31
Perch, Black	7	1	0.7	0.28	0.28
Flounder, Starry	8	1	0.7	0.23	0.23
Total		150	100		46.44

#### C. CPUE

Catch per Angler Day = 1.56      Catch per Angler Hour = 0.50  
 Kg per Angler Day = 0.48      Kg per Angler Hour = 0.15

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 75. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

#### A. Sampled Effort

Number Anglers Intercepted = 96  
 Total Hours Effort for Anglers Intercepted = 300.4  
 Total Hours Still to Fish (Incomplete Trips) = 14.5

#### B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Barred	1	41.96	119	80.4	116	0.35	254	52
Surfperch, Silver	2	1.58	17	11.5	17	0.09	181	13
Surfperch, Calico	3	1.12	6	4.1	6	0.19	210	34
Surfperch, Walleye	4	0.97	4	2.7	4	0.24	236	22
Perch, Black	5	0.28	1	0.7	1	0.28	248	0
Flounder, Starry	6	0.23	1	0.7	1	0.23	275	0
Total		46.13	148	100	145			

#### C. CPUE\*\*\*

Catch per Angler Day = 1.54      Catch per Angler Hour = 0.49  
 Kg per Angler Day = 0.48      Kg per Angler Hour = 0.15

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).



Table 76. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted = 63  
 Total Hours Effort for Anglers Intercepted = 219.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	128	44.4
Rockfish, Blue	2	32	11.1
Rockfishes (general)	3	31	10.8
Rockfish, Kelp	4	24	8.3
Mackerel, Pacific (Chub)	5	14	4.9
Rockfish, Gopher	6	12	4.2
Lingcod	7	12	4.2
Rockfish, Brown	8	6	2.1
Rockfish, Copper	9	5	1.7
Greenling, Kelp	10	5	1.7
Rockfish, Black-and-yellow	11	4	1.4
Sanddab, Pacific	12	3	1.0
Rockfish, Black	13	2	0.7
Rockfish, Canary	14	2	0.7
Rockfish, Olive	15	2	0.7
Unidentified Fishes	16	1	0.3
Rockfish, Yellowtail	17	1	0.3
Rockfish, Vermilion	18	1	0.3
Rockfish, China	19	1	0.3
Rockfish, Grass	20	1	0.3
Sculpin, Pacific Staghorn	21	1	0.3
Total		288	100

#### C. CPUE

Catch per Angler Day = 4.57      Catch per Angler Hour = 1.32

Table 77. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

## A. Sampled Effort

Number Anglers Intercepted = 63  
 Total Hours Effort for Anglers Intercepted = 219.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	83	41.3	0.20	16.87
Rockfish, Blue	2	32	15.9	0.24	7.55
Rockfish, Kelp	3	24	11.9	0.40	9.70
Rockfish, Gopher	4	12	6.0	0.32	3.81
Mackerel, Pacific (Chub)	5	11	5.5	0.54	5.93
Rockfishes (general)	6	6	3.0	0.32**	1.92
Rockfish, Brown	7	6	3.0	0.30	1.79
Rockfish, Copper	8	5	2.5	0.41	2.06
Greenling, Kelp	9	5	2.5	0.47	2.33
Rockfish, Black-and-yellow	10	4	2.0	0.36	1.46
Rockfish, Black	11	2	1.0	0.45	0.90
Rockfish, Canary	12	2	1.0	0.27	0.54
Rockfish, Olive	13	2	1.0	0.43	0.85
Unidentified Fishes	14	1	0.5	0.00**	0.00
Rockfish, Yellowtail	15	1	0.5	0.22	0.22
Rockfish, Vermilion	16	1	0.5	0.07	0.07
Rockfish, China	17	1	0.5	0.22	0.22
Rockfish, Grass	18	1	0.5	0.29	0.29
Lingcod	19	1	0.5	0.41	0.41
Sanddab, Pacific	20	1	0.5	0.05	0.05
Total		201	100		56.96

## C. CPUE

Catch per Angler Day = 3.19      Catch per Angler Hour = 0.92  
 Kg per Angler Day = 0.90      Kg per Angler Hour = 0.26

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 78. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 63  
 Total Hours Effort for Anglers Intercepted = 219.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	[---Mean---]		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Croaker, White	1	16.66	82	42.7	31	0.20	260	22
Rockfish, Kelp	2	9.70	24	12.5	19	0.40	299	25
Rockfish, Blue	3	7.55	32	16.7	27	0.24	245	32
Mackerel, Pacific (Chub)	4	5.39	10	5.2	10	0.54	341	15
Rockfish, Gopher	5	3.81	12	6.3	12	0.32	267	22
Greenling, Kelp	6	2.33	5	2.6	5	0.47	315	54
Rockfish, Copper	7	2.06	5	2.6	5	0.41	272	60
Rockfish, Brown	8	1.79	6	3.1	6	0.30	247	49
Rockfish, Black-and-yellow	9	1.46	4	2.1	4	0.36	265	36
Rockfish, Black	10	0.90	2	1.0	2	0.45	308	35
Rockfish, Olive	11	0.85	2	1.0	2	0.43	300	117
Rockfish, Canary	12	0.54	2	1.0	2	0.27	261	56
Lingcod	13	0.41	1	0.5	1	0.41	334	0
Rockfish, Grass	14	0.29	1	0.5	1	0.29	241	0
Rockfish, Yellowtail	15	0.22	1	0.5	1	0.22	250	0
Rockfish, China	16	0.22	1	0.5	1	0.22	234	0
Rockfish, Vermilion	17	0.07	1	0.5	1	0.07	158	0
Sanddab, Pacific	18	0.05	1	0.5	1	0.05	160	0
Total		54.30	192	100	131			

## C. CPUE\*\*\*

Catch per Angler Day = 3.05      Catch per Angler Hour = 0.88  
 Kg per Angler Day = 0.86      Kg per Angler Hour = 0.25

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 79. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Spear Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	7
Total Hours Effort for Anglers Intercepted	=	3.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Kelp	1	3	33.3
Cabazon	2	2	22.2
Rockfish, Copper	3	1	11.1
Rockfish, Vermillion	4	1	11.1
Rockfish, Olive	5	1	11.1
Lingcod	6	1	11.1
Total		9	100

#### C. CPUE

Catch per Angler Day	=	1.29	Catch per Angler Hour	=	2.57
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Table 30. Sampled Effort, Ranked Catch and CPUE for Area 4  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Spear Gear. Catch Represents Number Landed  
and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 7  
Total Hours Effort for Anglers Intercepted = 3.5  
Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Kelp	1	3	33.3	0.44	1.31
Cabezon	2	2	22.2	0.78	1.56
Rockfish, Copper	3	1	11.1	1.27	1.27
Rockfish, Vermilion	4	1	11.1	1.04	1.04
Rockfish, Olive	5	1	11.1	0.51	0.51
Lingcod	6	1	11.1	0.89	0.89
Total		9	100		6.57

C. CPUE

Catch per Angler Day = 1.29      Catch per Angler Hour = 2.57  
Kg per Angler Day = 0.94      Kg per Angler Hour = 1.88

\* Weight estimated from length-to-weight regression if available.

Table 81. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Spear Gear. Catch Represents Only the Fish Examined by the Sampler.

#### A. Sampled Effort

Number Anglers Intercepted = 7  
 Total Hours Effort for Anglers Intercepted = 3.5  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Cabezon	1	1.56	2	22.2	2	0.78	356	27
Rockfish, Kelp	2	1.31	3	33.3	3	0.44	305	33
Rockfish, Copper	3	1.27	1	11.1	1	1.27	410	0
Rockfish, Vermilion	4	1.04	1	11.1	1	1.04	400	0
Lingcod	5	0.89	1	11.1	1	0.89	434	0
Rockfish, Olive	6	0.51	1	11.1	1	0.51	342	0
Total		6.57	9	100	9			

#### C. CPUE\*\*\*

Catch per Angler Day = 1.29      Catch per Angler Hour = 2.57  
 Kg per Angler Day = 0.94      Kg per Angler Hour = 1.88

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 82. Sampled Effort, Ranked Catch and CPUE for Area 4  
in 1986 for Quarter 1, by All CPFV Anglers Using  
Hook-and-Line Gear. Catch Represents All Fish Captured,  
Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	111
Total Hours Effort for Anglers Intercepted	=	463.7
Total Hours Still to Fish (Incomplete Trips)	=	0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Bocaccio	1	461	23.3
Rockfish, Yellowtail	2	241	12.2
Rockfishes (general)	3	234	11.8
Mackerel, Pacific (Chub)	4	180	9.1
Rockfish, Blue	5	142	7.2
Rockfish, Widow	6	133	6.7
Rockfish, Greenstriped	7	90	4.6
Rockfish, Rosy	8	84	4.3
Chilipepper	9	76	3.8
Rockfish, Greenspotted	10	74	3.7
Rockfish, Canary	11	47	2.4
Rockfish, Starry	12	42	2.1
Rockfish, Speckled	13	23	1.2
Lingcod	14	19	1.0
Sablefish	15	19	1.0
Rockfish, Copper	16	18	0.9
Rockfish, Olive	17	15	0.8
Rockfish, Squarespot	18	14	0.7
Jack Mackerel	19	14	0.7
Unidentified Fishes	20	10	0.5
Rockfish, Brown	21	8	0.4
Rockfish, Flag	22	7	0.4
Spiny Dogfish	23	6	0.3
Rockfish, Rosethorn	24	6	0.3
Salmon, Chinook (King)	25	3	0.2
Rockfish, Vermilion	26	3	0.2

(Table 82. - continued)

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Gopher	27	2	0.1
Croaker, White	28	2	0.1
Rockfish, Yelloweye	29	1	0.1
Sole, Petrale	30	1	0.1
Total		1975	100

## C. CPUE

Catch per Angler Day = 17.79      Catch per Angler Hour = 4.26



Table 83. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 111  
 Total Hours Effort for Anglers Intercepted = 463.7  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Bocaccio	1	451	25.6	0.49	222.69
Rockfish, Yellowtail	2	241	13.7	0.48	116.76
Rockfish, Blue	3	140	8.0	0.34	47.33
Rockfish, Widow	4	133	7.6	0.65	86.74
Rockfishes (general)	5	120	6.8	0.51**	61.20
Mackerel, Pacific (Chub)	6	116	6.6	0.57	65.55
Rockfish, Greenstriped	7	90	5.1	0.36	32.27
Rockfish, Rosy	8	84	4.8	0.20	16.55
Chilipepper	9	76	4.3	0.74	56.22
Rockfish, Greenspotted	10	74	4.2	0.60	44.24
Rockfish, Canary	11	47	2.7	0.82	38.75
Rockfish, Starry	12	42	2.4	0.39	16.48
Rockfish, Speckled	13	23	1.3	0.54	12.42
Sablefish	14	19	1.1	0.45	8.59
Rockfish, Copper	15	18	1.0	1.43	25.72
Rockfish, Olive	16	15	0.9	0.70	10.54
Rockfish, Squarespot	17	14	0.8	0.19	2.71
Jack Mackerel	18	14	0.8	0.39	5.39
Rockfish, Brown	19	8	0.5	0.48	3.85
Rockfish, Flag	20	7	0.4	0.57	3.97
Rockfish, Rosethorn	21	6	0.3	0.24	1.46
Spiny Dogfish	22	5	0.3	1.98	9.88
Lingcod	23	4	0.2	1.67	6.69
Salmon, Chinook (King)	24	3	0.2	3.57	10.71
Rockfish, Vermilion	25	3	0.2	1.91	5.74
Unidentified Fishes	26	2	0.1	0.00**	0.00
Rockfish, Gopher	27	2	0.1	0.19	0.38

(Table 83. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg) *	Weight Caught
Croaker, White	28	2	0.1	0.32	0.65
Rockfish, Yelloweye	29	1	0.1	0.42	0.42
Sole, Petrale	30	1	0.1	0.66	0.66
Total		1761	100		914.54

## C. CPUE

Catch per Angler Day = 15.86      Catch per Angler Hour = 3.80  
 Kg per Angler Day = 8.24      Kg per Angler Hour = 1.97

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 84. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 111  
 Total Hours Effort for Anglers Intercepted = 463.7  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Bocaccio	1	222.19	450	28.2	345	0.49	353	63
Rockfish, Yellowtail	2	116.76	241	15.1	211	0.48	314	53
Rockfish, Widow	3	86.74	133	8.3	132	0.65	301	48
Mackerel, Pacific (Chub)	4	52.55	93	5.8	64	0.57	344	27
Rockfish, Blue	5	47.33	140	8.8	100	0.34	275	42
Chilipepper	6	45.12	61	3.8	60	0.74	385	51
Rockfish, Greenspotted	7	44.24	74	4.6	74	0.60	321	60
Rockfish, Canary	8	38.75	47	2.9	47	0.82	377	48
Rockfish, Greenstriped	9	31.55	88	5.5	86	0.36	303	57
Rockfish, Copper	10	25.72	18	1.1	18	1.43	421	53
Rockfish, Rosy	11	16.55	84	5.3	84	0.20	228	21
Rockfish, Starry	12	16.48	42	2.6	42	0.39	282	49
Rockfish, Speckled	13	12.42	23	1.4	23	0.54	329	54
Salmon, Chinook (King)	14	10.71	3	0.2	3	3.57	722	34
Rockfish, Olive	15	10.54	15	0.9	15	0.70	368	60
Spiny Dogfish	16	9.88	5	0.3	5	1.98	783	228
Sablefish	17	8.59	19	1.2	19	0.45	370	32
Lingcod	18	6.69	4	0.3	4	1.67	519	112
Rockfish, Vermilion	19	5.74	3	0.2	3	1.91	479	108
Jack Mackerel	20	4.62	12	0.8	11	0.39	312	45
Rockfish, Flag	21	3.97	7	0.4	7	0.57	317	45
Rockfish, Brown	22	3.85	8	0.5	8	0.48	295	43
Rockfish, Squarespot	23	2.71	14	0.9	14	0.19	245	23
Rockfish, Rosethorn	24	1.46	6	0.4	6	0.24	247	7
Sole, Petrale	25	0.66	1	0.1	1	0.66	374	0
Croaker, White	26	0.65	2	0.1	2	0.32	304	23

(Table 84. - continued)

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Yelloweye	27	0.42	1	0.1	1	0.42	285	0
Rockfish, Gopher	28	0.38	2	0.1	2	0.19	225	35
Total		827.27	1596	100	1387			

## C. CPUE\*\*\*

Catch per Angler Day = 14.38      Catch per Angler Hour = 3.44  
 Kg per Angler Day = 7.45      Kg per Angler Hour = 1.78

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Figure 9. Length-Frequency Histogram for Barred Surfperch  
 Taken by Beach and Bank Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 1, 1986.

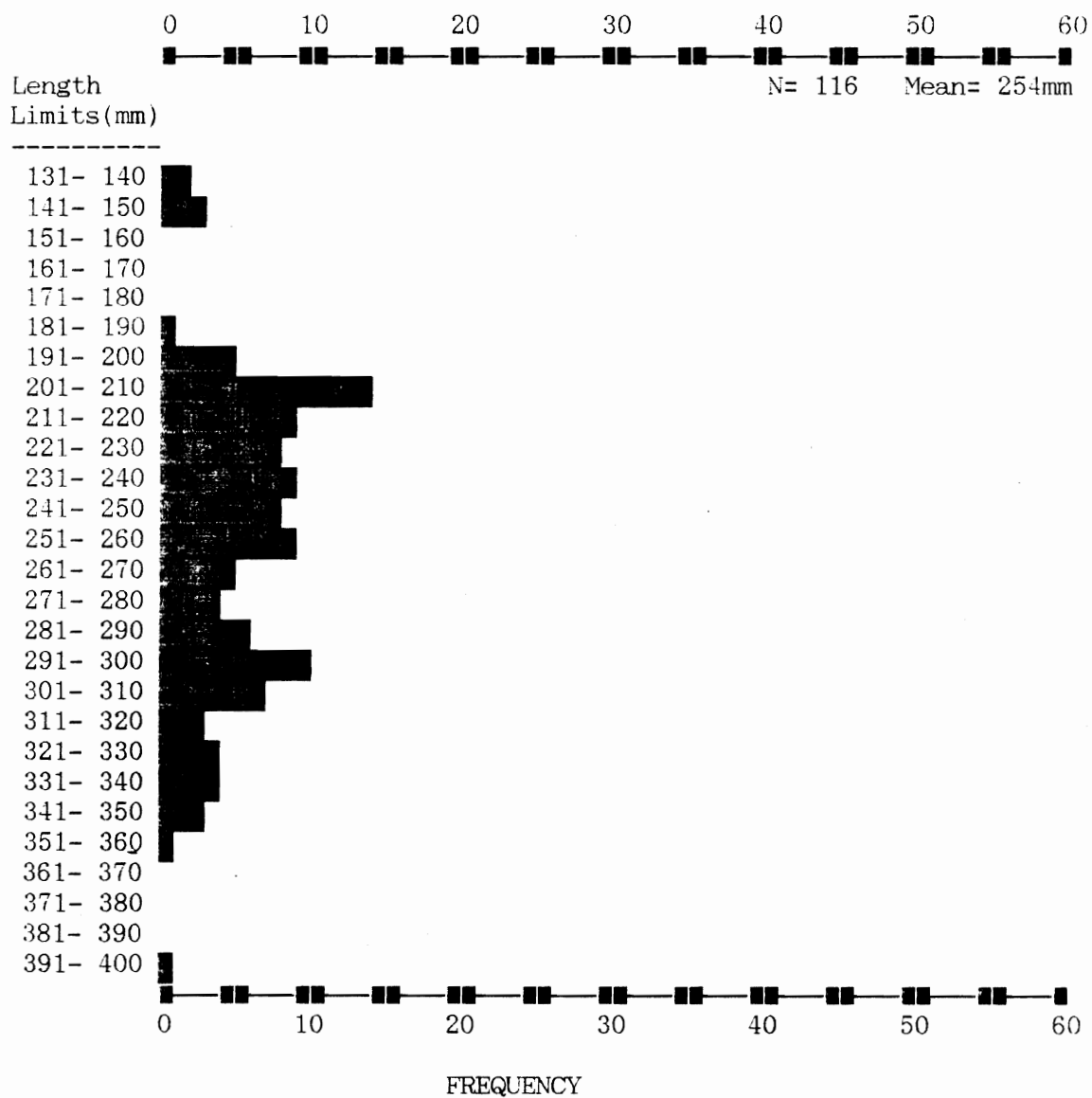


Figure 10. Length-Frequency Histogram for Bocaccio  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 1, 1986.

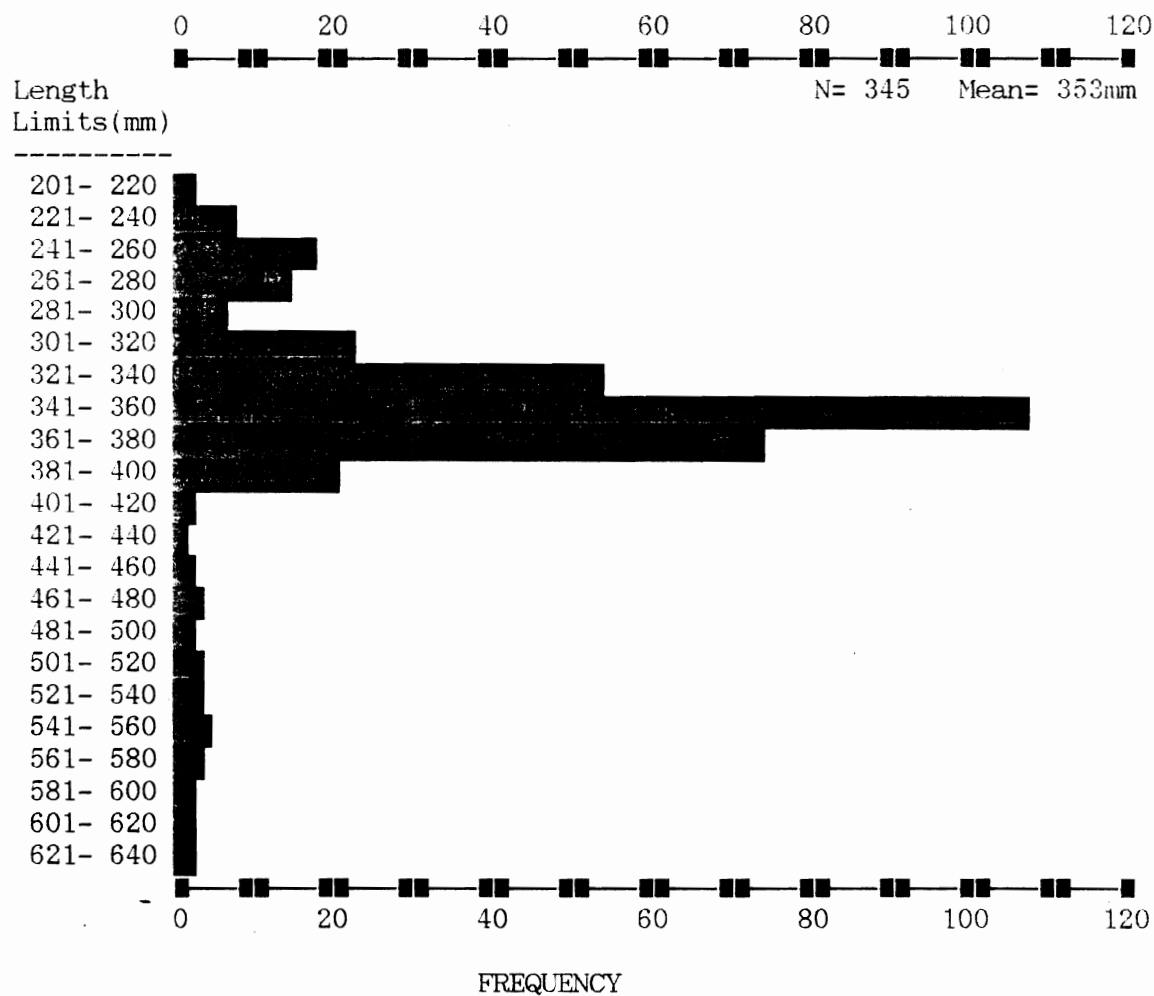


Figure 11. Length-Frequency Histogram for Pacific (Chub) Mackerel  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 1, 1986.

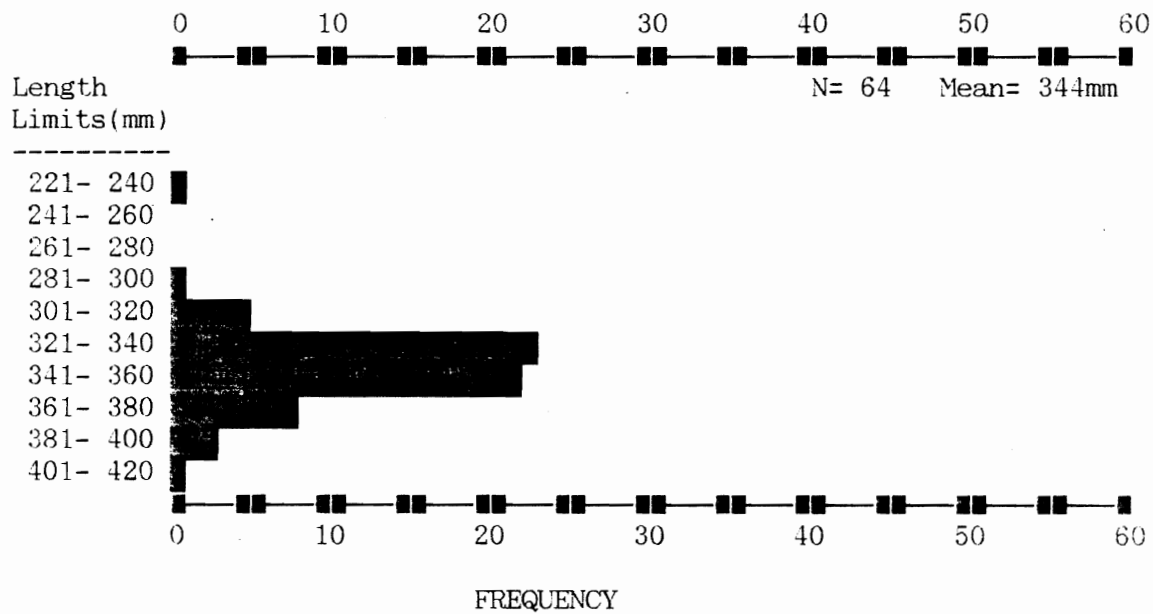


Figure 12. Length-Frequency Histogram for Blue Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 1, 1986.

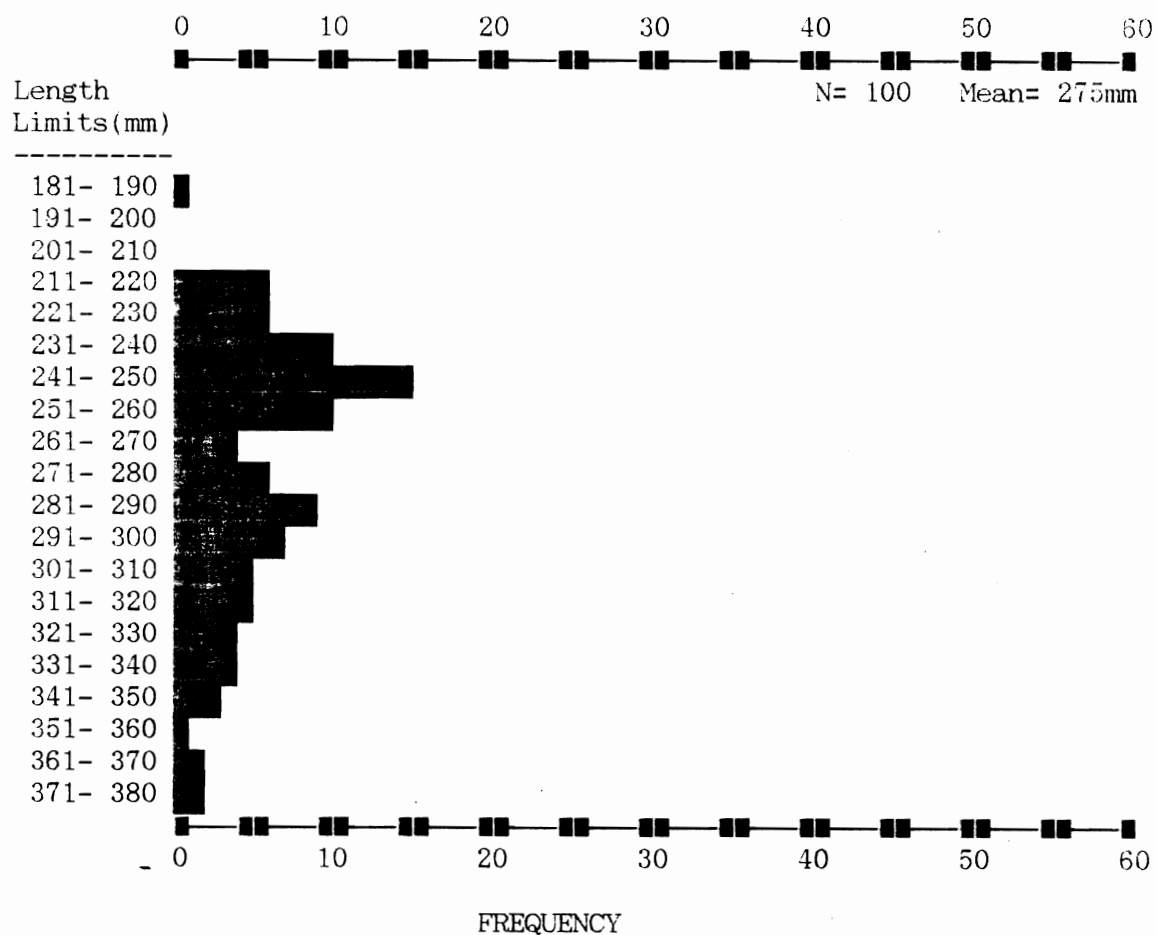




Figure 13. Length-Frequency Histogram for Canary Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 1, 1986.

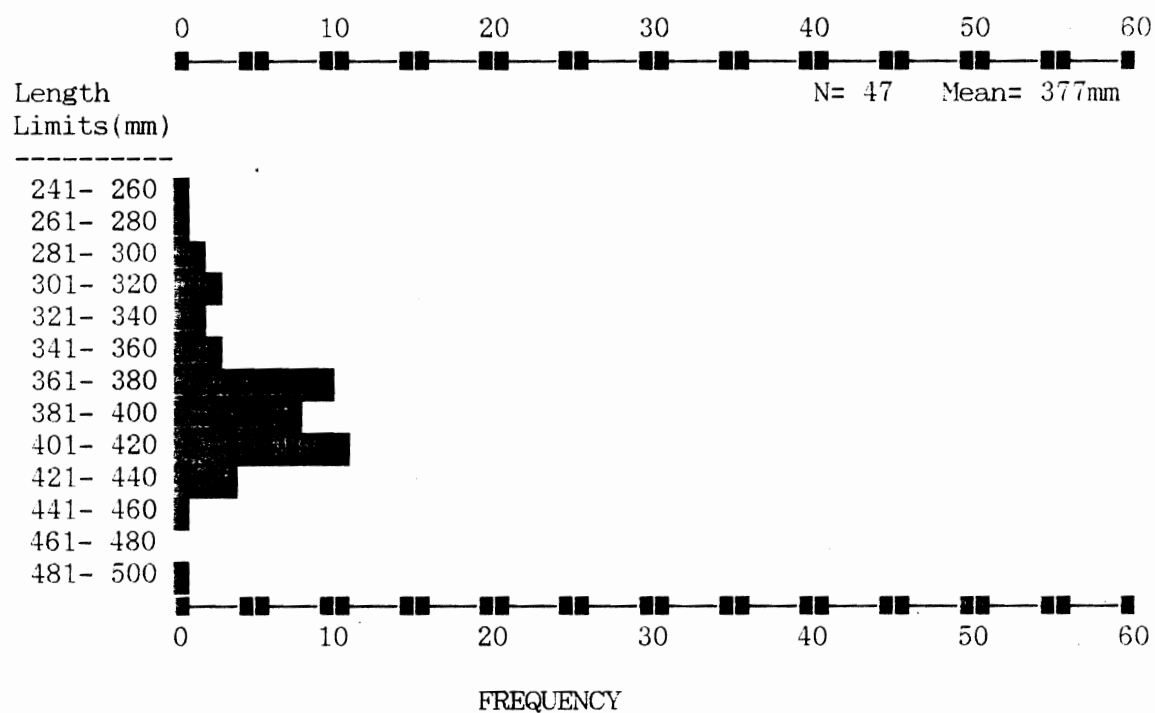


Figure 14. Length-Frequency Histogram for Greenstriped Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 1, 1986.

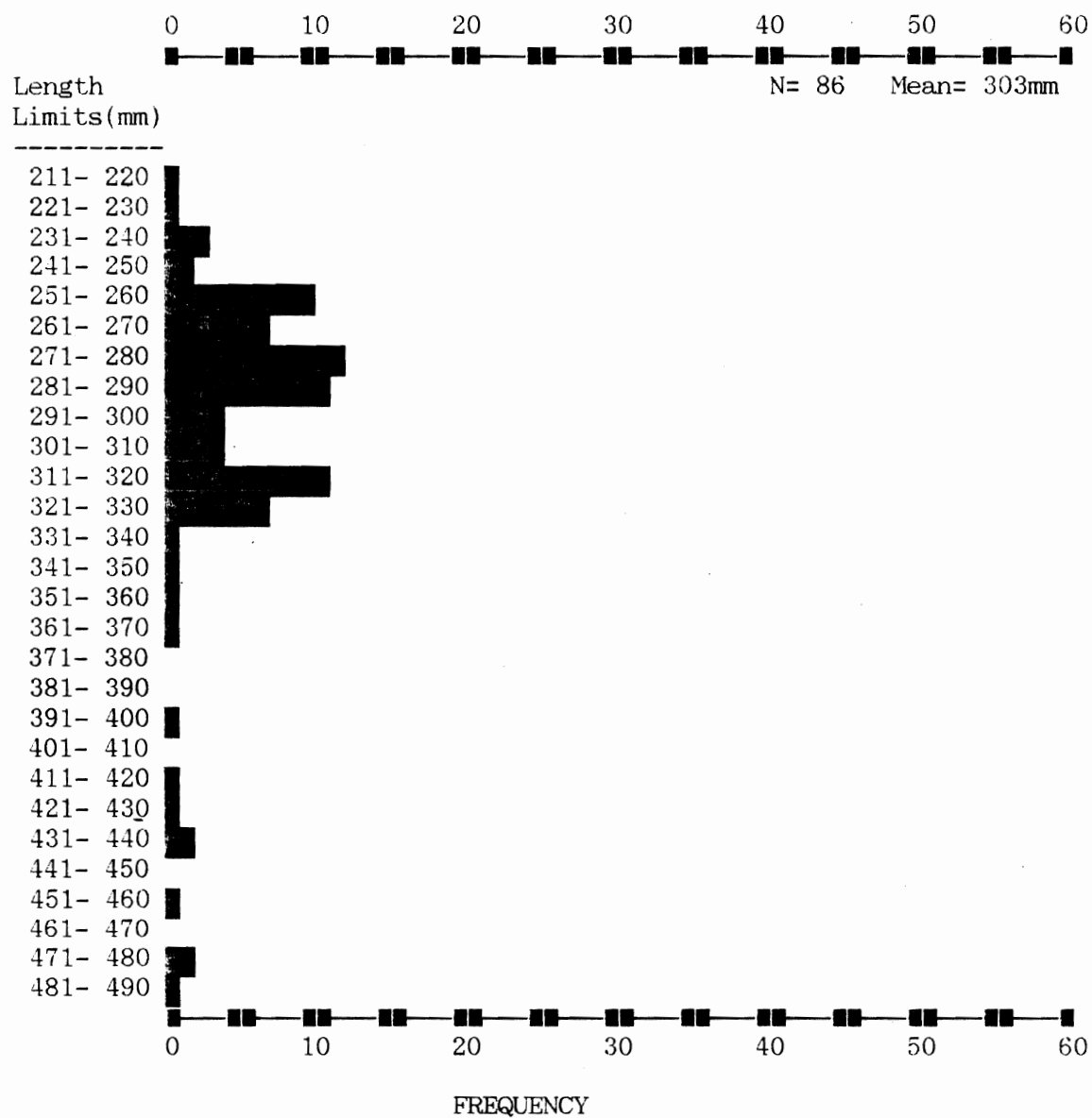


Figure 15. Length-Frequency Histogram for Rosy Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 1, 1986.

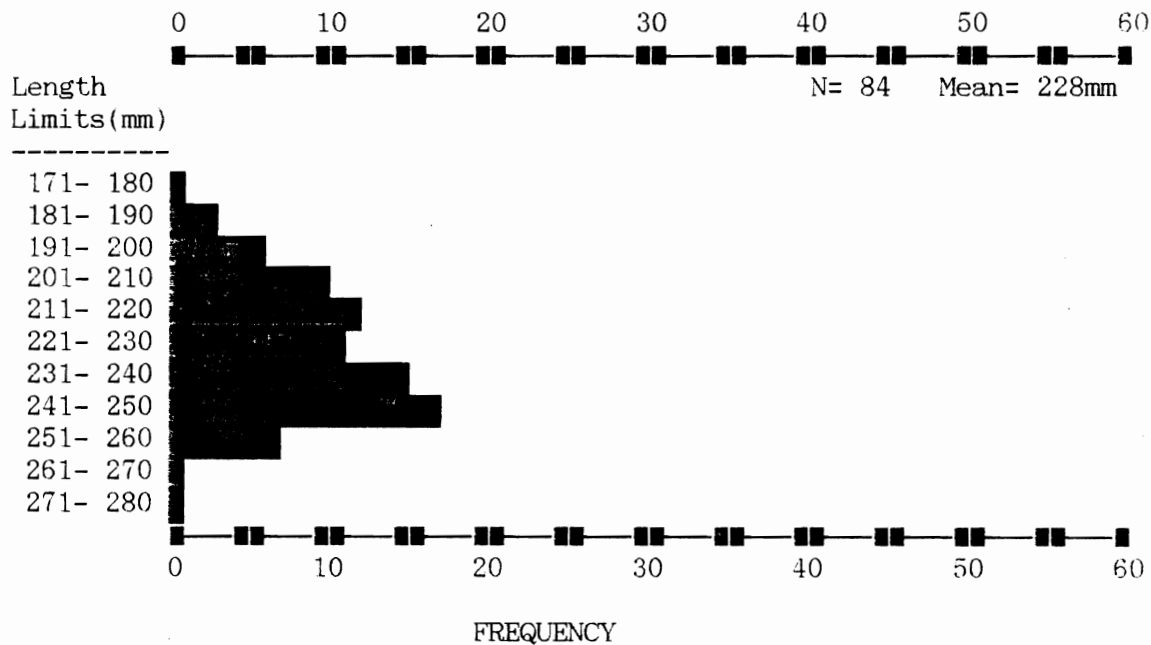


Figure 16. Length-Frequency Histogram for Widow Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 1, 1986.

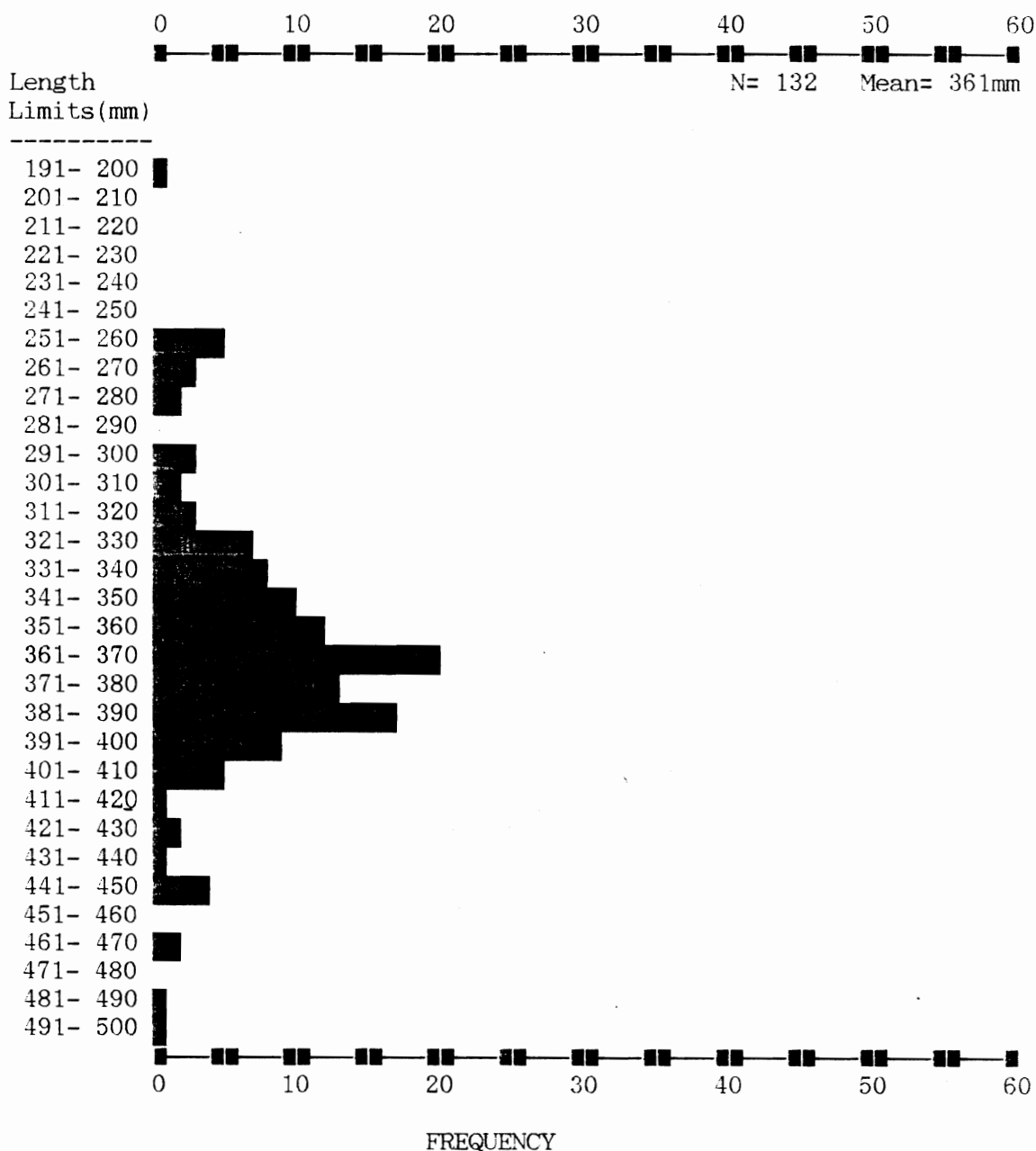


Figure 17. Length-Frequency Histogram for Yellowtail Rockfish  
Taken by All CPFV Anglers Using Hook-and-Line Gear.  
Area 4, Quarter 1, 1986.

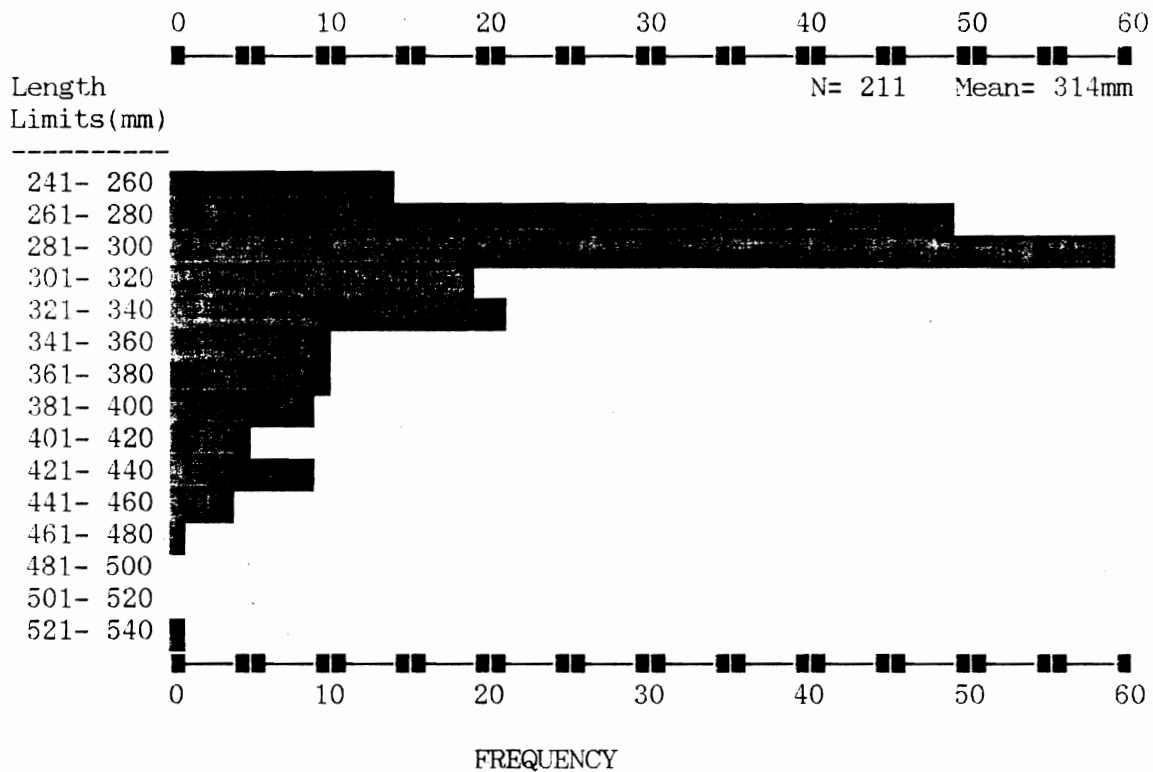


Table 85. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	83
Total Hours Effort for Anglers Intercepted	=	213.5
Total Hours Still to Fish (Incomplete Trips)	=	19.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	74	41.6
Surfperch, Barred	2	29	16.3
Surfperch, Silver	3	21	11.8
Surfperches	4	17	9.6
Surfperch, Walleye	5	15	8.4
Jacksmelt	6	9	5.1
Surfperch, Calico	7	6	3.4
Sharks	8	2	1.1
Sculpin, Pacific Staghorn	9	2	1.1
Queenfish	10	2	1.1
Sculpins	11	1	0.6
Total		178	100

#### C. CPUE

Catch per Angler Day = 2.14      Catch per Angler Hour = 0.33

Table 36. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 83  
 Total Hours Effort for Anglers Intercepted = 213.5  
 Total Hours Still to Fish (Incomplete Trips) = 19.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	49	45.0	0.18	8.81
Surfperch, Barred	2	20	18.3	0.19	3.81
Surfperch, Silver	3	11	10.1	0.13	1.40
Surfperch, Walleye	4	10	9.2	0.15	1.47
Jacksmelt	5	9	8.3	0.34	3.06
Surfperch, Calico	6	4	3.7	0.18	0.72
Surfperches	7	3	2.8	0.16**	0.48
Queenfish	8	2	1.8	0.10	0.21
Sharks	9	1	0.9	0.00**	0.00
Total		109	100		19.95

#### C. CPUE

Catch per Angler Day = 1.31      Catch per Angler Hour = 0.51  
 Kg per Angler Day = 0.24      Kg per Angler Hour = 0.09

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 87. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 1, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

#### A. Sampled Effort

Number Anglers Intercepted = 83  
 Total Hours Effort for Anglers Intercepted = 213.5  
 Total Hours Still to Fish (Incomplete Trips) = 19.0

#### B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	[---Mean---]		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Croaker, White	1	4.50	25	32.1	19	0.18	250	23
Surfperch, Barred	2	3.43	18	23.1	18	0.19	216	18
Jacksmelt	3	2.72	8	10.3	8	0.34	350	17
Surfperch, Walleye	4	1.47	10	12.8	10	0.15	207	16
Surfperch, Silver	5	1.40	11	14.1	11	0.13	200	17
Surfperch, Calico	6	0.72	4	5.1	4	0.18	223	15
Queenfish	7	0.21	2	2.6	2	0.10	214	32
Total		14.43	78	100	72			

#### C. CPUE\*\*\*

Catch per Angler Day = 0.94      Catch per Angler Hour = 0.37  
 Kg per Angler Day = 0.17      Kg per Angler Hour = 0.07

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).



Table 88. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 70  
 Total Hours Effort for Anglers Intercepted = 133.0  
 Total Hours Still to Fish (Incomplete Trips) = 13.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Barred	1	86	72.9
Surfperch, Silver	2	15	12.7
Surfperch, Calico	3	4	3.4
Cabazon	4	3	2.5
Bass, Kelp	5	3	2.5
Surfperches	6	3	2.5
Seabass, White	7	1	0.8
Croaker, White	8	1	0.8
Perch, Shiner	9	1	0.8
Perch, Black	10	1	0.8
Total		118	100

C. CPUE

Catch per Angler Day = 1.69      Catch per Angler Hour = 0.89

Table 89. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

#### A. Sampled Effort

Number Anglers Intercepted = 70  
 Total Hours Effort for Anglers Intercepted = 133.0  
 Total Hours Still to Fish (Incomplete Trips) = 13.5

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Barred	1	76	75.2	0.36	27.32
Surfperch, Silver	2	15	14.9	0.09	1.33
Surfperch, Calico	3	4	4.0	0.16	0.64
Cabazon	4	2	2.0	2.32	4.64
Bass, Kelp	5	1	1.0	0.27	0.27
Seabass, White	6	1	1.0	0.29	0.29
Croaker, White	7	1	1.0	0.33	0.33
Perch, Black	8	1	1.0	0.31	0.31
Total		101	100		35.18

#### C. CPUE

Catch per Angler Day = 1.44      Catch per Angler Hour = 0.76  
 Kg per Angler Day = 0.50      Kg per Angler Hour = 0.26

\* Weight estimated from length-to-weight regression if available.

Table 90. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 1, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 70  
 Total Hours Effort for Anglers Intercepted = 133.0  
 Total Hours Still to Fish (Incomplete Trips) = 13.5

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	[---Mean---]		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Barred	1	26.96	75	76.5	66	0.36	261	38
Cabezon	2	4.64	2	2.0	2	2.32	481	256
Surfperch, Silver	3	1.21	13	13.3	13	0.09	182	12
Surfperch, Calico	4	0.64	4	4.1	4	0.16	215	15
Croaker, White	5	0.33	1	1.0	1	0.33	306	0
Perch, Black	6	0.31	1	1.0	1	0.31	260	0
Seabass, White	7	0.29	1	1.0	1	0.29	307	0
Bass, Kelp	8	0.27	1	1.0	1	0.27	278	0
Total		34.64	98	100	89			

## C. CPUE\*\*\*

Catch per Angler Day = 1.40      Catch per Angler Hour = 0.74  
 Kg per Angler Day = 0.49      Kg per Angler Hour = 0.26

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 91. Sampled Effort, Ranked Catch and CPUE for Area 5  
in 1986 for Quarter 1, by Private or Rental Boat Anglers Using  
Hook-and-Line Gear. Catch Represents All Fish Captured,  
Both Kept and Returned.

## A. Sampled Effort

Number Anglers Intercepted	=	112
Total Hours Effort for Anglers Intercepted	=	335.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	148	23.9
Rockfish, Gopher	2	82	13.2
Rockfishes (general)	3	69	11.1
Barracuda, Pacific	4	62	10.0
Rockfish, Yellowtail	5	48	7.8
Croaker, White	6	37	6.0
Mackerel, Pacific (Chub)	7	35	5.7
Rockfish, Canary	8	28	4.5
Rockfish, Olive	9	20	3.2
Rockfish, Brown	10	18	2.9
Lingcod	11	17	2.7
Rockfish, Black	12	8	1.3
Rockfish, Vermilion	13	7	1.1
Rockfish, Copper	14	6	1.0
Jacksmelt	15	4	0.6
Rockfish, Rosy	16	4	0.6
Cabezon	17	4	0.6
Perch, Black	18	4	0.6
Rockfish, Black-and-yellow	19	3	0.5
Skates	20	2	0.3
Bocaccio	21	2	0.3
Rockfish, Starry	22	2	0.3
Rockfish, Speckled	23	2	0.3
Greenling, Kelp	24	2	0.3
Halibut, California	25	2	0.3
Salmon, Chinook (King)	26	1	0.2

(Table 91. - continued)

Common name	Rank by Number	Number Caught	% by Number
Rockfish, China	27	1	0.2
Queenfish	28	1	0.2
Total		619	100

## C. CPUE

Catch per Angler Day = 5.53      Catch per Angler Hour = 1.35

Table 92. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

## A. Sampled Effort

Number Anglers Intercepted = 112  
 Total Hours Effort for Anglers Intercepted = 335.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	144	29.6	0.29	41.19
Rockfish, Gopher	2	74	15.2	0.33	24.39
Rockfishes (general)	3	59	12.1	0.38**	22.42
Rockfish, Yellowtail	4	48	9.9	0.45	21.61
Rockfish, Canary	5	28	5.7	0.42	11.71
Croaker, White	6	19	3.9	0.27	5.08
Rockfish, Brown	7	18	3.7	0.67	11.99
Mackerel, Pacific (Chub)	8	18	3.7	0.65	11.72
Rockfish, Olive	9	14	2.9	0.42	5.89
Barracuda, Pacific	10	13	2.7	1.67	21.73
Rockfish, Black	11	8	1.6	0.43	3.43
Rockfish, Vermilion	12	7	1.4	1.24	8.66
Rockfish, Copper	13	6	1.2	0.76	4.59
Rockfish, Rosy	14	4	0.8	0.26	1.04
Lingcod	15	4	0.8	2.27	9.09
Cabezon	16	4	0.8	1.81	7.23
Perch, Black	17	4	0.8	0.48	1.91
Rockfish, Black-and-yellow	18	3	0.6	0.30	0.90
Bocaccio	19	2	0.4	0.24	0.49
Rockfish, Starry	20	2	0.4	0.44	0.88
Rockfish, Speckled	21	2	0.4	0.18	0.37
Greenling, Kelp	22	2	0.4	0.61	1.22
Salmon, Chinook (King)	23	1	0.2	4.53	4.53
Rockfish, China	24	1	0.2	0.28	0.28
Queenfish	25	1	0.2	0.12	0.12
Halibut, California	26	1	0.2	2.50	2.50
Total		487	100		224.95

## C. CPUE

Catch per Angler Day = 4.35      Catch per Angler Hour = 1.45  
 Kg per Angler Day = 2.01      Kg per Angler Hour = 0.67

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 93. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 1, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 112  
 Total Hours Effort for Anglers Intercepted = 335.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Blue	1	40.33	141	34.4	85	0.29	262	31
Rockfish, Gopher	2	24.06	73	17.8	68	0.33	271	24
Rockfish, Yellowtail	3	20.71	46	11.2	34	0.45	312	37
Barracuda, Pacific	4	15.05	9	2.2	9	1.67	768	28
Rockfish, Brown	5	11.99	18	4.4	17	0.67	329	49
Rockfish, Canary	6	11.71	28	6.8	28	0.42	305	23
Lingcod	7	9.09	4	1.0	4	2.27	586	79
Rockfish, Vermilion	8	8.66	7	1.7	7	1.21	414	72
Cabezon	9	7.23	4	1.0	4	1.81	485	40
Mackerel, Pacific (Chub)	10	7.16	11	2.7	11	0.65	358	32
Rockfish, Olive	11	5.89	14	3.4	14	0.42	320	23
Croaker, White	12	5.08	19	4.6	19	0.27	284	26
Rockfish, Copper	13	4.59	6	1.5	6	0.76	310	114
Salmon, Chinook (King)	14	4.53	1	0.2	1	4.53	783	0
Rockfish, Black	15	3.43	8	2.0	8	0.43	304	16
Halibut, California	16	2.50	1	0.2	1	2.50	620	0
Perch, Black	17	1.91	4	1.0	4	0.48	308	12
Rockfish, Rosy	18	1.04	4	1.0	4	0.26	251	21
Rockfish, Black-and-yellow	19	0.90	3	0.7	3	0.30	253	7
Rockfish, Starry	20	0.88	2	0.5	2	0.44	299	33
Greenling, Kelp	21	0.61	1	0.2	1	0.61	353	0
Bocaccio	22	0.49	2	0.5	2	0.24	283	67
Rockfish, Speckled	23	0.37	2	0.5	2	0.18	239	40
Rockfish, China	24	0.28	1	0.2	1	0.28	252	0
Queenfish	25	0.12	1	0.2	1	0.12	230	0
Total		188.59	410	100	336			

## C. CPUE\*\*\*

Catch per Angler Day = 3.66      Catch per Angler Hour = 1.22  
 Kg per Angler Day = 1.68      Kg per Angler Hour = 0.56

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Table 04. Sampled Effort, Ranked Catch and CPUE for Area 5  
in 1986 for Quarter 1, by All CPFV Anglers Using  
Hook-and-Line Gear. Catch Represents All Fish Captured,  
Both Kept and Returned.

#### A. Sampled Effort

Number Anglers Intercepted	=	109
Total Hours Effort for Anglers Intercepted	=	390.1
Total Hours Still to Fish (Incomplete Trips)	=	0.0

#### B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Bocaccio	1	396	32.5
Rockfish, Widow	2	258	21.2
Rockfishes (general)	3	140	11.5
Rockfish, Yellowtail	4	87	7.1
Rockfish, Blue	5	49	4.0
Rockfish, Gopher	6	49	4.0
Chilipepper	7	42	3.4
Rockfish, Rosy	8	39	3.2
Rockfish, Yelloweye	9	28	2.3
Rockfish, Starry	10	26	2.1
Rockfish, Canary	11	23	1.9
Rockfish, Copper	12	18	1.5
Lingcod	13	16	1.3
Rockfish, Greenstriped	14	10	0.8
Rockfish, China	15	8	0.7
Rockfish, Greenspotted	16	8	0.7
Rockfish, Squarespot	17	4	0.3
Sablefish	18	4	0.3
Rockfish, Vermilion	19	3	0.2
Rockfish, Kelp	20	2	0.2
Sole, Rock	21	2	0.2
Sharks	22	1	0.1



(Table 94. - continued)

Common name	Rank by Number	Number Caught	% by Number
Salmon, Chinook (King)	23	1	0.1
Rockfish, Olive	24	1	0.1
Cabazon	25	1	0.1
Mackerel, Pacific (Chub)	26	1	0.1
Sanddab, Pacific	27	1	0.1
Total		1218	100

## C. CPUE

Catch per Angler Day = 11.17      Catch per Angler Hour = 3.12

Table 95. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

## A. Sampled Effort

Number Anglers Intercepted = 109  
 Total Hours Effort for Anglers Intercepted = 390.1  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Bocaccio	1	396	33.5	0.56	220.33
Rockfish, Widow	2	258	21.8	0.36	93.87
Rockfishes (general)	3	111	9.4	0.48**	53.28
Rockfish, Yellowtail	4	87	7.4	0.48	41.66
Rockfish, Gopher	5	49	4.1	0.32	15.75
Rockfish, Blue	6	47	4.0	0.33	15.28
Chilipepper	7	42	3.6	0.71	29.65
Rockfish, Rosy	8	39	3.3	0.18	7.19
Rockfish, Yelloweye	9	28	2.4	0.61	16.98
Rockfish, Starry	10	26	2.2	0.57	14.82
Rockfish, Canary	11	23	1.9	0.41	9.54
Rockfish, Copper	12	18	1.5	1.25	22.41
Lingcod	13	13	1.1	4.01	52.11
Rockfish, Greenstriped	14	10	0.8	0.26	2.56
Rockfish, China	15	8	0.7	0.48	3.84
Rockfish, Greenspotted	16	8	0.7	0.39	3.15
Rockfish, Squarespot	17	4	0.3	0.19	0.76
Rockfish, Vermilion	18	3	0.3	2.61	7.83
Rockfish, Kelp	19	2	0.2	0.40	0.80
Sablefish	20	2	0.2	0.26	0.53
Sole, Rock	21	2	0.2	0.55	1.10
Salmon, Chinook (King)	22	1	0.1	4.33	4.33
Rockfish, Olive	23	1	0.1	0.49	0.49
Cabazon	24	1	0.1	0.44	0.44
Mackerel, Pacific (Chub)	25	1	0.1	0.00**	0.00
Sanddab, Pacific	26	1	0.1	0.00**	0.00
Total		1181	100		618.70

## C. CPUE

Catch per Angler Day = 10.83      Catch per Angler Hour = 3.03  
 Kg per Angler Day = 5.68      Kg per Angler Hour = 1.59

\* Weight estimated from length-to-weight regression if available.

\*\* Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 96. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 1, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 109  
 Total Hours Effort for Anglers Intercepted = 390.1  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Bocaccio	1	219.22	394	37.1	230	0.56	371	41
Rockfish, Widow	2	93.87	258	24.3	147	0.36	305	27
Lingcod	3	52.11	13	1.2	13	4.01	689	152
Rockfish, Yellowtail	4	41.66	87	8.2	85	0.48	313	54
Chilipepper	5	29.65	42	4.0	42	0.71	375	66
Rockfish, Copper	6	19.92	16	1.5	16	1.25	397	69
Rockfish, Yelloweye	7	16.98	28	2.6	28	0.61	315	47
Rockfish, Gopher	8	15.75	49	4.6	49	0.32	270	22
Rockfish, Blue	9	14.96	46	4.3	46	0.33	273	36
Rockfish, Starry	10	14.82	26	2.4	26	0.57	316	58
Rockfish, Canary	11	9.54	23	2.2	23	0.41	300	43
Rockfish, Vermillion	12	7.83	3	0.3	3	2.61	542	75
Rockfish, Rosy	13	7.00	38	3.6	38	0.18	223	21
Salmon, Chinook (King)	14	4.33	1	0.1	1	4.33	771	0
Rockfish, China	15	3.84	8	0.8	8	0.48	296	26
Rockfish, Greenspotted	16	3.15	8	0.8	8	0.39	283	31
Rockfish, Greenstriped	17	2.56	10	0.9	10	0.26	272	37
Sole, Rock	18	1.10	2	0.2	2	0.55	344	31
Rockfish, Kelp	19	0.80	2	0.2	2	0.40	298	25
Rockfish, Squarespot	20	0.76	4	0.4	4	0.19	245	12
Sablefish	21	0.53	2	0.2	2	0.26	308	6
Rockfish, Olive	22	0.49	1	0.1	1	0.49	337	0
Cabezon	23	0.44	1	0.1	1	0.44	290	0
Total		561.30	1062	100	785			

## C. CPUE\*\*\*

Catch per Angler Day = 9.74      Catch per Angler Hour = 2.72  
 Kg per Angler Day = 5.15      Kg per Angler Hour = 1.44

\* Weight estimated from length-to-weight regression if available.

\*\* Total length except for species with tuna-like caudal fins (see text).

\*\*\* CPUE is underestimated if all fish taken were not examined (see text).

Figure 18. Length-Frequency Histogram for Blue Rockfish  
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 1, 1986.

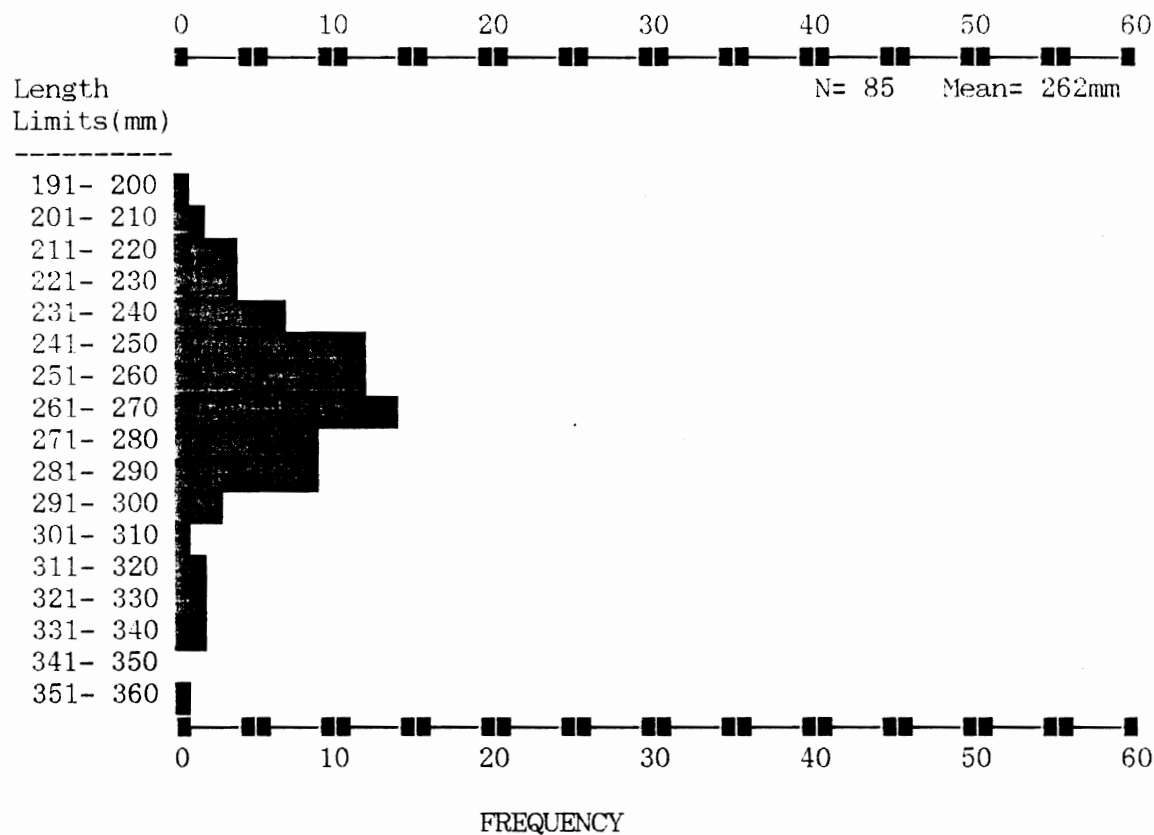


Figure 19. Length-Frequency Histogram for Gopher Rockfish  
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 1, 1986.

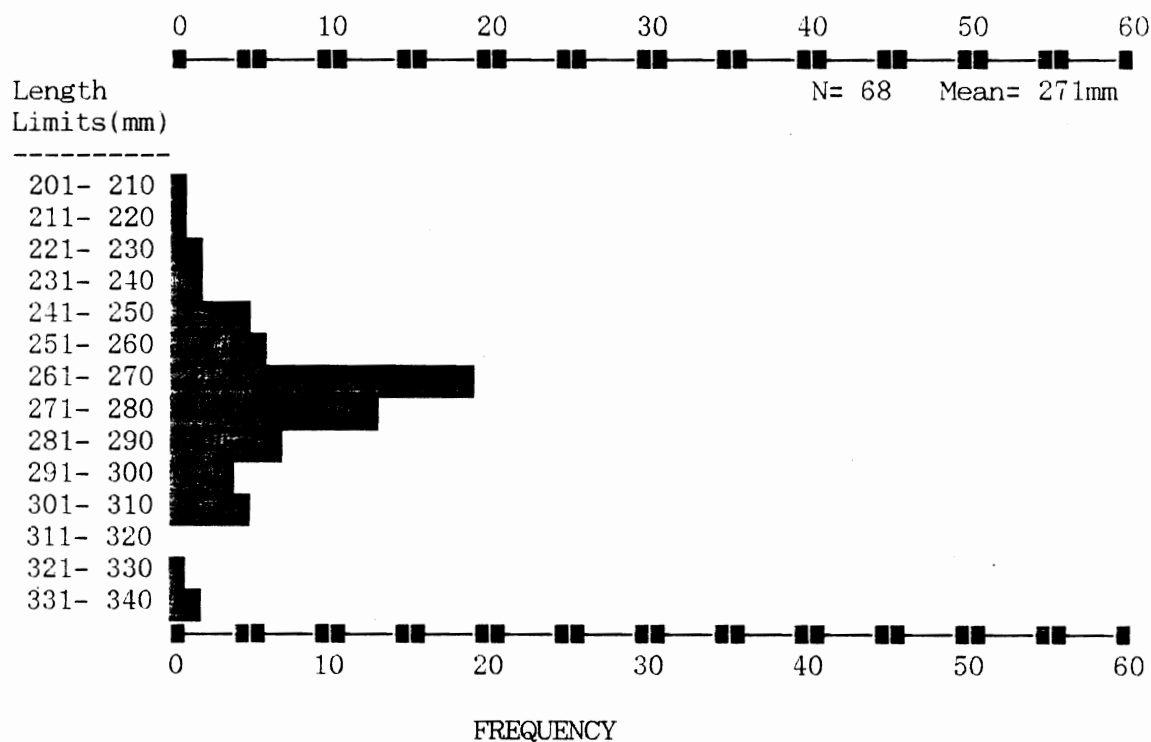


Figure 20. Length-Frequency Histogram for Yellowtail Rockfish  
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 1, 1986.

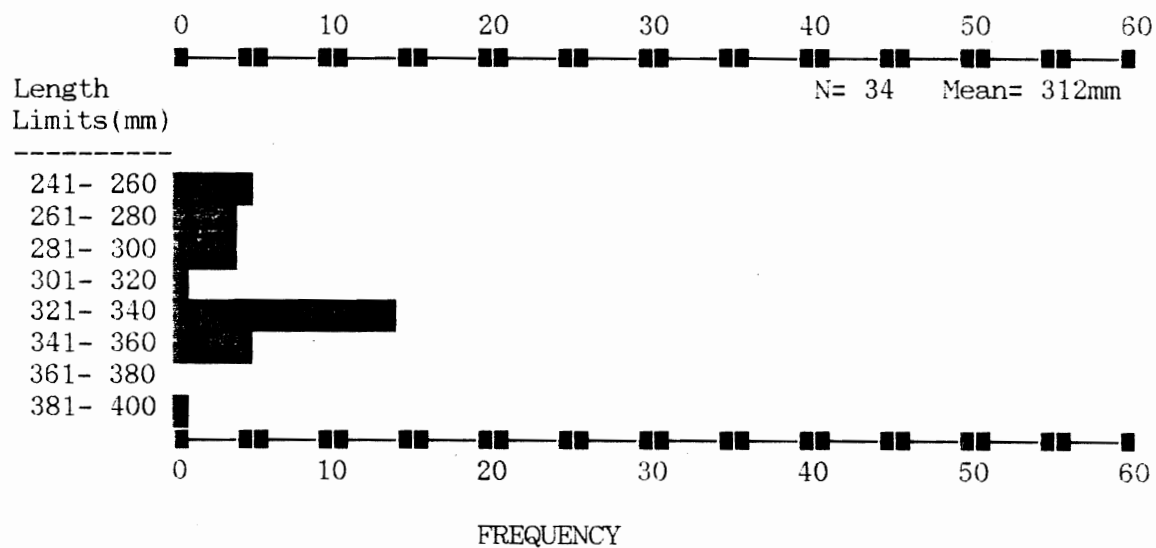


Figure 21. Length-Frequency Histogram for Bocaccio  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 1, 1986.

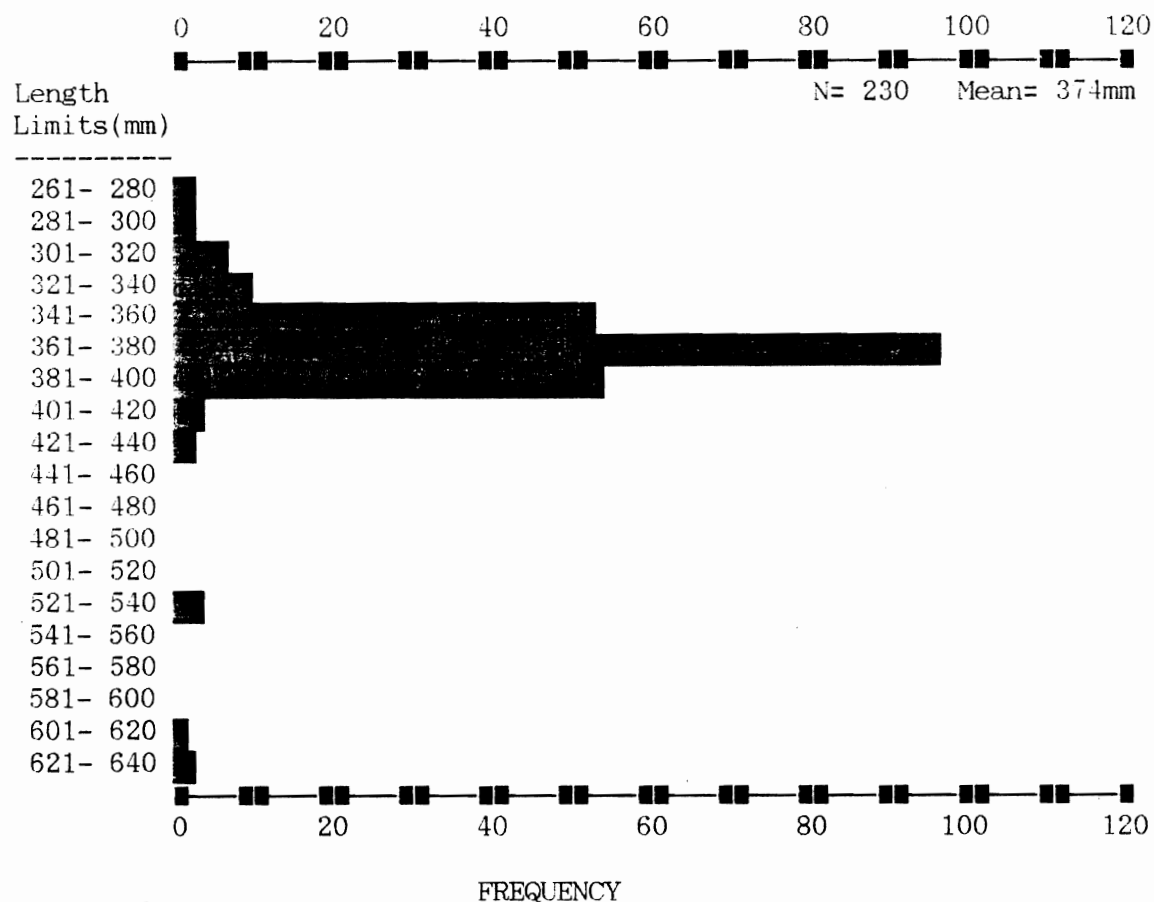


Figure 22. Length-Frequency Histogram for Blue Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 1, 1986.

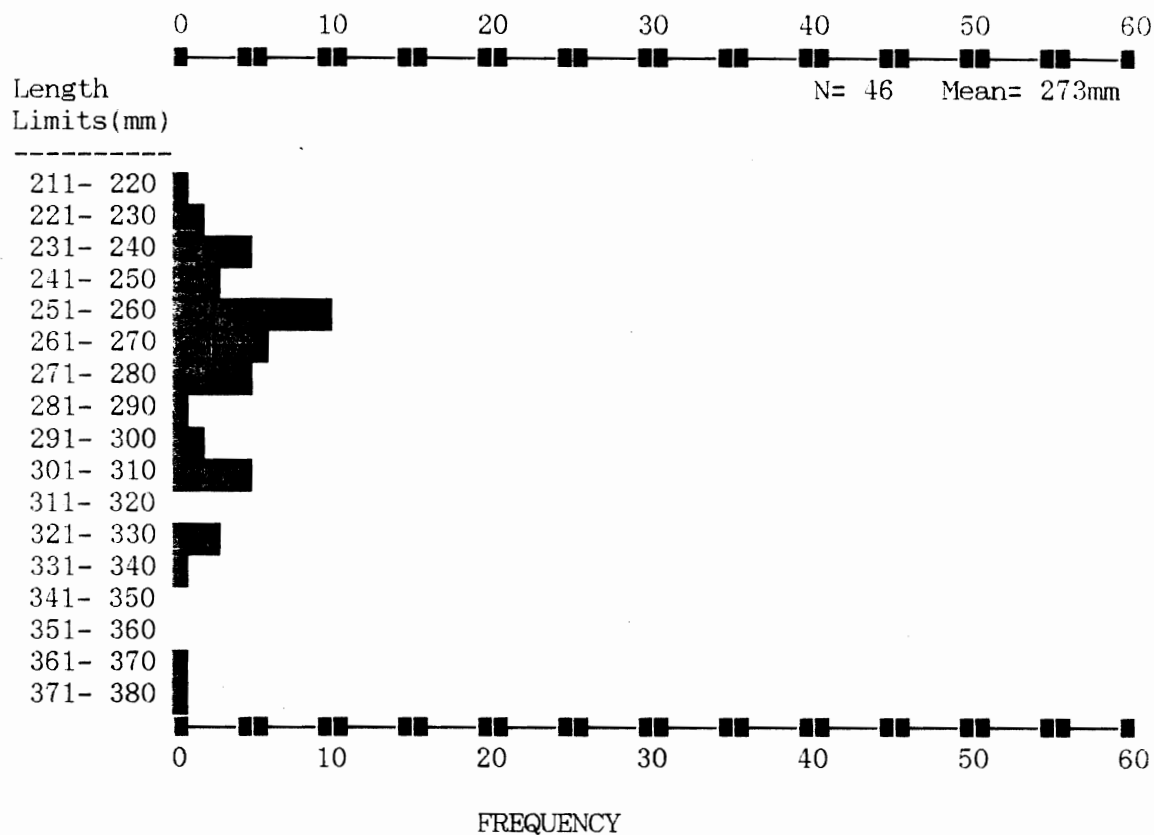




Figure 23. Length-Frequency Histogram for Gopher Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 1, 1986.

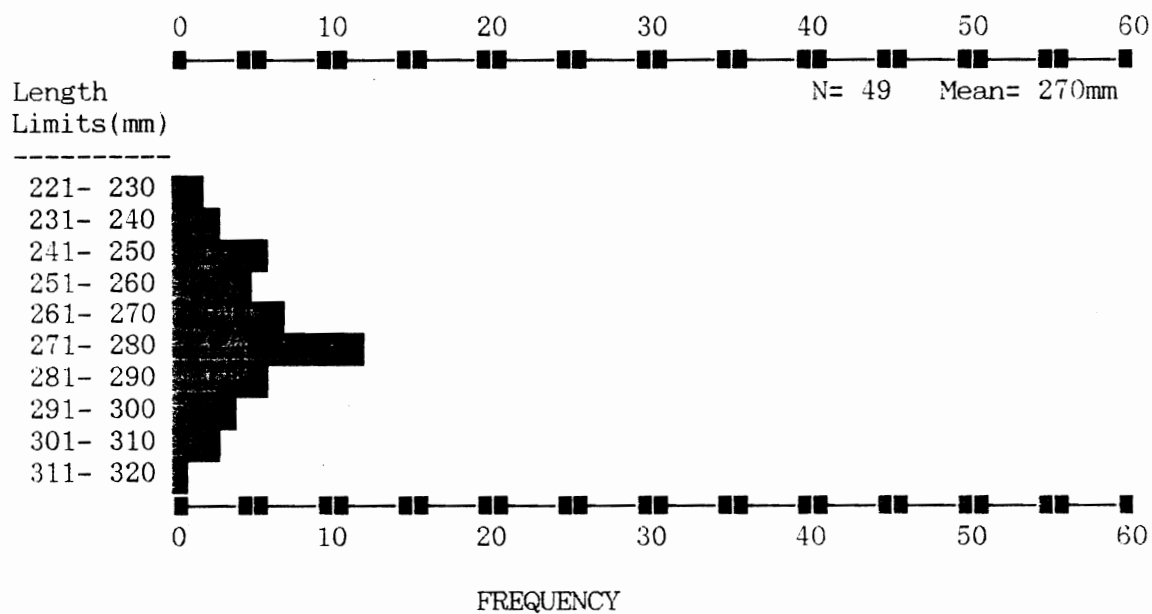


Figure 24. Length-Frequency Histogram for Widow Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 1, 1986.

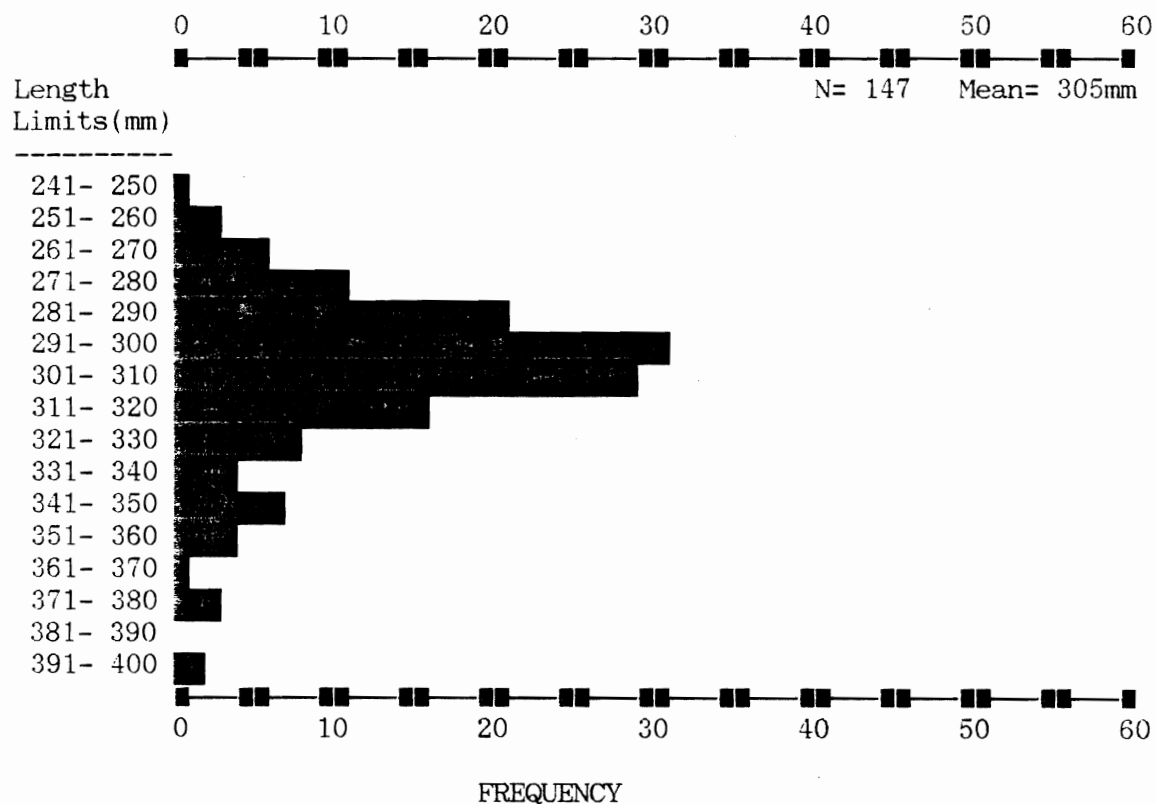
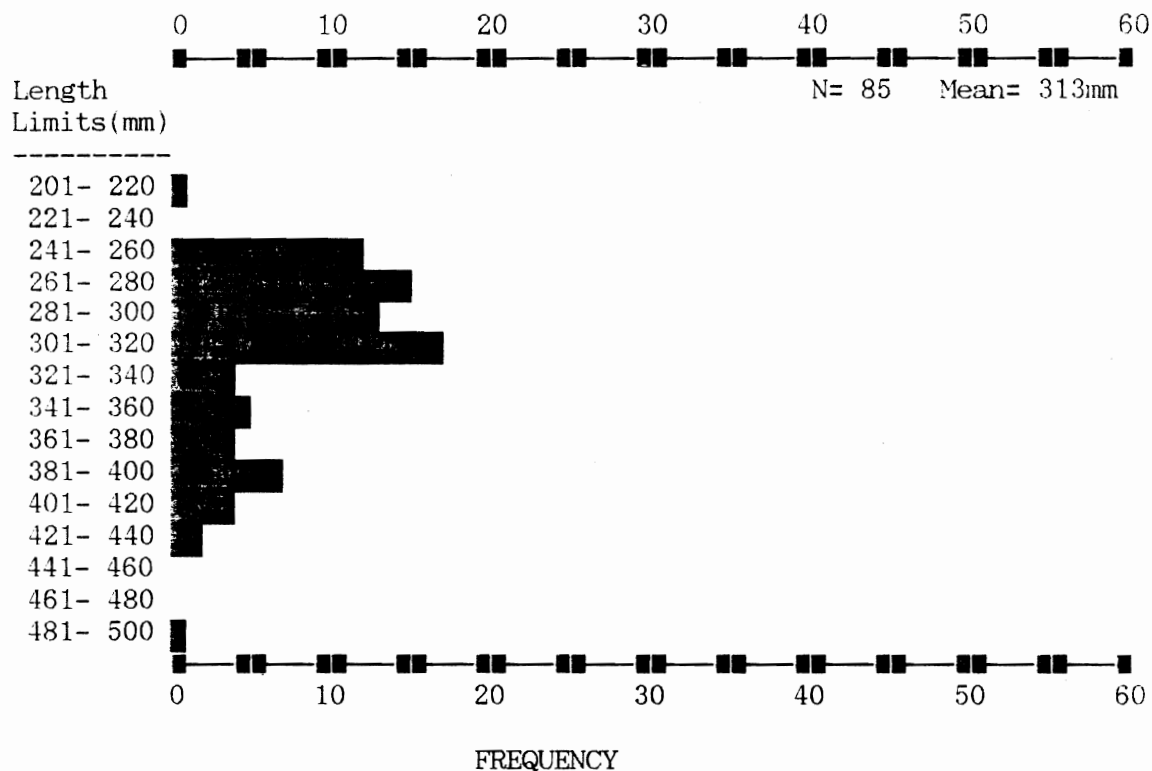


Figure 25. Length-Frequency Histogram for Yellowtail Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 1, 1986.



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APPENDIX A

Pages 133 to 280 are on the attached microfiche on inside of back cover.

Appendix B. List of Common Names, Scientific Names, and Length-Weight Parameters from All Areas in 1986 for Quarter 1, Taken by All Mode Anglers Using All Types of Gear.

Common Name	Scientific Name	a	b
Jack Mackerel	<u>Trachurus symmetricus</u>	0.00000331000	3.22320
Seaperch, Rubberlip	<u>Rhacochilus toxotes</u>	0.00003220500	2.90840
Perch, Pile	<u>Rhacochilus vacca</u>	0.00000925500	3.09900
Greenlings (general)	<u>Hexagrammidae</u>	0.00002604300	2.89280
Seaperch, White	<u>Phanerodon furcatus</u>	0.00001366000	2.97800
Flounder, Starry	<u>Platichthys stellatus</u>	0.00000163000	3.34000
Rockfish, Kelp	<u>Sebastes atrovirens</u>	0.00003277410	2.86200
Rockfish, Brown	<u>Sebastes auriculatus</u>	0.00002601290	2.93360
Rockfish, Gopher	<u>Sebastes carnatus</u>	0.00002047310	2.95730
Rockfish, Copper	<u>Sebastes caurinus</u>	0.00001648140	3.01800
Rockfish, Greenspotted	<u>Sebastes chlorostictus</u>	0.00002047310	2.95730
Rockfish, Black-and-yellow	<u>Sebastes chrysomelas</u>	0.00000446010	3.25650
Rockfish, Starry	<u>Sebastes constellatus</u>	0.00000531230	3.19500
Rockfish, Greenstriped	<u>Sebastes elongatus</u>	0.00000475820	3.15310
Rockfish, Widow	<u>Sebastes entomelas</u>	0.00000291200	3.25430
Rockfish, Yellowtail	<u>Sebastes flavidus</u>	0.00001130400	3.04020
Chilipepper	<u>Sebastes goodei</u>	0.00000283950	3.24380
Rockfish, Rosethorn	<u>Sebastes helvomaculatus</u>	0.00001678550	2.99430
Rockfish, Squarespot	<u>Sebastes hopkinsi</u>	0.00000324000	3.25050
Rockfish, Quillback	<u>Sebastes maliger</u>	0.00003000000	2.93000
Rockfish, Black	<u>Sebastes melanops</u>	0.00001965710	2.95480
Rockfish, Vermilion	<u>Sebastes miniatus</u>	0.00002677000	2.91650
Rockfish, Blue	<u>Sebastes mystinus</u>	0.00001624670	2.98849
Rockfish, China	<u>Sebastes nebulosus</u>	0.00000564040	3.20470
Rockfish, Speckled	<u>Sebastes ovalis</u>	0.00000324000	3.25050
Bocaccio	<u>Sebastes paucispinis</u>	0.00000583320	3.09410
Rockfish, Canary	<u>Sebastes pinniger</u>	0.00001051000	3.05560
Rockfish, Grass	<u>Sebastes rastrelliger</u>	0.00000575900	3.23500
Rockfish, Rosy	<u>Sebastes rosaceus</u>	0.00001678900	2.99430
Rockfish, Yelloweye	<u>Sebastes ruberrimus</u>	0.00001304370	3.05710
Rockfish, Flag	<u>Sebastes rubrivinctus</u>	0.00002346750	2.94310
Rockfish, Olive	<u>Sebastes serranoides</u>	0.00000521020	3.15410
Rockfishes (general)	<u>Sebastes spp.</u>	0.00000521020	3.15410
Prickleback, Monkeyface	<u>Cebidichthys violaceus</u>	0.00000000000	0.00000
Perch, Black	<u>Embiotoca jacksoni</u>	0.00029100000	2.49640
Seaperch, Striped	<u>Embiotoca lateralis</u>	0.00001540000	3.01000
Salmon, Chinook (King)	<u>Oncorhynchus tshawytscha</u>	0.00000944000	3.00000
Sole, Sand	<u>Psettichthys melanostictus</u>	0.00000277100	3.26480
Jacksmelt	<u>Atherinopsis californiensis</u>	0.00000098820	3.35360
Flounders, Lefteye	<u>Bothidae</u>		
Lingcod	<u>Ophiodon elongatus</u>	0.00001157000	2.99000
Barracuda, Pacific	<u>Sphyraena argentea</u>	0.00000412016	2.98300
Shark, Leopard	<u>Triakis semifasciata</u>	0.00002089000	2.88000
Skates	<u>Rajidae</u>		
Unidentified Fishes	<u>Unidentified Pisces</u>	0.00000000000	0.00000
Surfperches	<u>Embiotocidae</u>	0.00000000000	0.00000
Sturgeon, Green	<u>Acipenser medirostris</u>	0.00000053086	3.34800

## APPENDIX B (continued)

Common Name	Scientific Name	a	b
Sturgeon, White	<u>Acipenser transmontanus</u>	0.00000053086	3.34800
Skate, Big	<u>Raja binoculata</u>	0.00002428050	2.85496
Ray, Bat	<u>Myliobatis californica</u>	0.00001054400	3.09289
Trout, Cutthroat	<u>Salmo clarkii</u>	0.00000507000	3.14000
Trout, Rainbow	<u>Salmo gairdnerii</u>	0.00000637000	3.06300
Perch, Shiner	<u>Cymatogaster aggregata</u>	0.00000473500	3.21000
Sharks	<u>Chondrichthyes</u>	0.00000000000	0.00000
Croaker, White	<u>Genyonemus lineatus</u>	0.00000708500	3.08328
Fringehead, Onespot	<u>Neoclinus uninotatus</u>	0.00000000000	0.00000
Mackerel, Pacific (Chub)	<u>Scomber japonicus</u>	0.00000136600	3.39360
Sculpin, Buffalo	<u>Enophrys bison</u>	0.00001790000	2.89600
Sablefish	<u>Anoplopoma fimbria</u>	0.00002248980	2.84080
Cabezon	<u>Scorpaenichthys marmoratus</u>	0.00008823220	2.72030
Sturgeons (general)	<u>Acipenseridae</u>	0.00000053086	3.34800
Surfperch, Walleye	<u>Hyperprosopon argenteum</u>	0.00000035580	3.71700
Surfperch, Silver	<u>Hyperprosopon ellipticum</u>	0.00000469894	3.22700
Prickleback, Rock	<u>Xiphister mucosus</u>	0.00000000000	0.00000
Surfperch, Barred	<u>Amphistichus argenteus</u>	0.00001070000	3.10250
Surfperch, Calico	<u>Amphistichus koelzi</u>	0.00000469894	3.22700
Surfperch, Redtail	<u>Amphistichus rhodoterus</u>	0.00000469894	3.22700
Sole, Rock	<u>Lepidopsetta bilineata</u>	0.00000760300	3.09570
Sole, Petrale	<u>Eopsetta jordani</u>	0.00000305800	3.23950
Seaperch, Rainbow	<u>Hypsurus caryi</u>	0.00001535000	3.00700
Sculpin, Pacific Staghorn	<u>Leptocottus armatus</u>	0.00001790000	2.89600
Seabass, White	<u>Atractoscion nobilis</u>	0.00001549000	2.92167
Bass, Kelp	<u>Paralabrax clathratus</u>	0.00000271598	3.27000
Sand bass, Spotted	<u>Paralabrax maculatofasciatus</u>	0.00001828600	2.96730
Halibut, California	<u>Paralichthys californicus</u>	0.00000849000	3.03300
Queenfish	<u>Seriphus politus</u>	0.00001549000	2.92200
Bass, Striped	<u>Morone saxatilis</u>	0.00001068210	2.90671
Smoothhound, Brown	<u>Mustelus henlei</u>	0.00002089000	2.88000
Sanddab, Pacific	<u>Citharichthys sordidus</u>	0.00000142860	3.37080
Sanddab, Speckled	<u>Citharichthys stigmaeus</u>	0.00000266000	3.29530
Sculpins	<u>Cottidae</u>	0.00000000000	0.00000
Spiny Dogfish	<u>Squalus acanthias</u>	0.00000189000	3.09000
Herring, Pacific	<u>Clupea harengus pallasii</u>	0.00002519100	2.84900
Flounders, Righteye	<u>Pleuronectidae</u>	0.00000305800	3.24000
Greenling, Kelp	<u>Hexagrammos decagrammus</u>	0.00002604300	2.89280
Greenling, Rock	<u>Hexagrammos lagocephalus</u>	0.00002604300	2.89280
Stingrays	<u>Dasyatidae</u>		